

The January

February

March

S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
		3	4	5	6				1	2	3						1	2	3	
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
28	29	30	31																	

A Publication Of The Surrey Amateur Radio Club

April

S	M	T	W	T
1	2	3	4	5
8	9	10	11	12
15	16	17	18	19
22	23	24	25	26
29	30			

June

S	T	W	T	F	S
				1	2
3	4	5	6	7	8
12	13	14	15	16	17
19	20	21	22	23	24
25	26	27	28	29	30

September

S	M	T
1	2	3
8	9	10
15	16	17
22	23	24
29	30	31

F	S
	1
7	8
14	15
20	21
26	27

October

Happy New Year



SARC

January
2018

January 2018



CONTACTS

(778) 683-4662

General Correspondence
12144 - 57A Avenue
Surrey, BC V3X 2S3
[SARC at ve7sar.net](http://SARC.at.ve7sar.net)

Operations & Training Centre
14265 - 57 Avenue

COMMUNICATOR & BLOG EDITOR

John Schouten VE7TI

WEBMASTER

Jeremy Morse VE7TMY

The **Communicator** is a publication of the Surrey Amateur Radio Club. It appears monthly, except July and August, for area Amateur Radio operators, to enhance the exchange of information and to promote local ham radio activity.

To subscribe, unsubscribe or change your address for e-mail delivery of this newsletter, notify [communicator @ ve7sar.net](mailto:communicator@ve7sar.net)

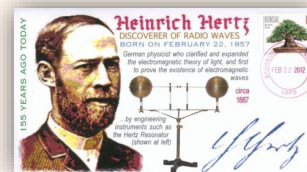
Regular readers who are not SARC members are invited to contribute a \$5 annual [donation](#) towards our Field Day fund.

SARC maintains a website at www.ve7sar.net and a Digital Communicator at ve7sar.blogspot.ca that includes recent news, past issues of The Communicator, club history, photos, videos and other information.

IN THIS ISSUE

click on the page number below

	QRM	3
The Rest Of The Story—Heinrich Hertz		4
Back To Basics		8
Tech Topics—Mobile Installation Basics		10
What's Happening This Month In Ham?		12
News You Can Lose		13
Club News—SARC		14
Club News—OTC		16
Radio-Active		17
Emergency Comms		19
Club News—SEPAR Report		20
Satellite News		23
News From Clubs		24
Hardware		25
Tech Topics II		28
Tech Topics III		32
Field Day 2017 Reviewed		36



On The January Cover...

We move into a new year and a new set of challenges. Our Operations and Training Centre will move forward in a big way in 2018 with the arrival of new equipment. We will undoubtedly have our 'usual' events including Basic Courses, the Fox Hunt, Field Day and who knows what else? We hope that you will be actively involved in our hobby that has so much to offer and so many possibilities. Happy New Year!





QRM

...from the Editor's Shack

*Do you have a photo or bit of club news to share?
An Interesting link?*

*Something to sell or something you are looking for?
eMail it to [communicator @ ve7sar.net](mailto:communicator@ve7sar.net) for inclusion in this publication.*

First of all, Happy New Year! May it be a safe, healthy and prosperous one for you and your loved ones.

In the last Communicator, available at <https://goo.gl/reUR1x>, and on our blog ve7sar.blogspot.ca, Stan our SARC President asked for feedback on his QRT column: "What Direction To Take?" Hundreds of you visited, and are still visiting our blog site as a result, the most ever for a single article, and a number of thoughtful comments were left. Stan is reviewing these comments and will prepare a summary and response.

Our best wishes go to two members whom have been under the weather recently.

Hui Yee VE7YXG had open heart surgery in November. We have heard from him and he is progressing well. Hui has written for the Communicator in the past, including some technical and building projects. We look forward to seeing him at club events again soon.

The other is Robert Fishwick VA7FMR. Apparently an old E.coli infection re-activated in his system and it put him out of circulation and in hospital for a few days. Unfortunately this all happened days before the Christmas party, which

he was forced to miss. Robert was at a recent Saturday coffee meeting though and although worn down, he is on the mend.

The Christmas party was an enjoyable time. It is one of the few club events where we see members and their 'significant others'. The only other is Field Day but with few exceptions the 'others' are usually no shows. Former Surrey Councilor, and now MLA, Marvin Hunt who represents Surrey-Cloverdale and his wife Ruth attended as special guests (*photos page 14*). Following welcoming remarks from club President Stan Williams VA7NF, Marvin spoke and commended members on their willingness to devote countless hours, at no pay, to community service. He mentioned our progress and accomplishments to date and encouraged the club to continue on its course.

Jinty is looking for feedback on this year's event and she will be making a recommendation to the club Directors to reserve a date and location for next Christmas. Let her know your thoughts jinty.reid@gmail.com.

~ John VE7TI
Communicator Editor

On the Web

ve7sar.net

Between newsletters, watch your e-mail for news, announcements of Amateur Radio events, monthly meetings and training opportunities.

Click the links below to follow our presence on the web:

SARC Blog
ve7sar.blogspot.ca

Twitter
[@ve7sar](https://twitter.com/ve7sar)

FaceBook
[SurreyAmateurRadio](https://www.facebook.com/SurreyAmateurRadio)

Our YouTube Channel
[SurreyARC](https://www.youtube.com/SurreyARC)

SARC Photo Albums
[Web Albums](#)

or
tinyurl.com/SARCphoto

You can get excited about the future. The past won't mind." — Hillary DePiano

January 2018



The Rest Of The Story...

Henrich Hertz

Pioneer of Electromagnetic Waves



Heinrich Hertz

Heinrich Rudolf Hertz was born in 1857 in Hamburg, then a sovereign state of the German Confederation, into a prosperous and cultured Hanseatic family. His father Gustav Ferdinand Hertz (1827-1914) was a barrister and later a senator. His mother was Anna Elisabeth Pfefferkorn. Hertz's father converted from Judaism to Christianity in 1834. His mother's family was a Lutheran pastor's family.

While studying at the Gelehrtenschule des Johanneums in Hamburg, Hertz showed an aptitude for sciences as well as languages, learning Arabic and Sanskrit. He studied sciences and engineering in the German cities of Dresden, Munich and Berlin, where he studied under Gustav R. Kirchhoff and Hermann von Helmholtz. In 1880, Hertz obtained his PhD from the University of Berlin, and for the next three years remained for post-doctoral study under Helmholtz, serving as his assistant. In 1883, Hertz took a post as a lecturer in theoretical physics at the University of Kiel, and in 1885, Hertz became a full professor at the University of Karlsruhe.

In 1886, Hertz married Elisabeth Doll, the daughter of Dr. Max Doll, a lecturer in geometry at Karlsruhe. They had two daughters: Johanna, born on 20 October 1887 and Mathilde, born on 14 January 1891, who went on to become a notable biologist. During this time Hertz conducted his landmark research into electromagnetic waves.

With the publication of the results of his experiments and the many demonstrations he made, Hertz soon became famous. He was offered the position of professor of physics at the University of Bonn which he took up in 1889. Here he continued his research,

but this time he started to investigate the discharge of electricity in rarefied gasses. He continued to publish papers on his work and reinforced his reputation as one of the foremost researchers of his time. In addition to this he received a number of honours from the various scientific bodies. One of these was from the Royal Society in London.

During this time he also worked on theoretical mechanics with his work published in the book *Die Prinzipien der Mechanik in neuem Zusammenhange dargestellt* (The Principles of Mechanics Presented in a New Form), published posthumously in 1894. This book was based on his work in 1886-1889, when Hertz published articles on what was to become known as the field of contact mechanics.

Hertz is well known for his contributions to the field of electrodynamics; however, most papers that look into the fundamental nature of contact cite his two papers as a source for some important ideas. Joseph Valentin Boussinesq published some critically important observations on Hertz's work, nevertheless establishing this work on contact mechanics to be of immense importance. Hertz's research from his days as a lecturer, preceding his great work on electromagnetism, which he himself considered with his characteristic soberness to be trivial, has come down to the age of nanotechnology.

During Hertz's studies in 1879 Helmholtz suggested that Hertz's doctoral dissertation be on testing Maxwell's theory of electromagnetism, published in 1865, which predicted the existence of electromagnetic waves moving at the speed of light, and predicted that light itself was just such a wave. Helmholtz had also proposed the



"Berlin Prize" problem that year at the Prussian Academy of Sciences for anyone who could experimentally prove an electromagnetic effect in the polarization and depolarization of insulators, something predicted by Maxwell's theory. Helmholtz was sure Hertz was the most likely candidate to win it. Not seeing any way to build an apparatus to experimentally test this, Hertz thought it was too difficult, and worked on electromagnetic induction instead. Hertz did produce an analysis of Maxwell's equations during his time at Kiel, showing they did have more validity than the then prevalent "action at a distance" theories.

After Hertz received his professorship at Karlsruhe he was experimenting with a pair of Riess spirals in the autumn of 1886 when he noticed that discharging a Leyden jar into one of these coils would produce a spark in the other coil. With an idea on how to build an apparatus, Hertz now had a way proceed with the "Berlin Prize" problem of 1879 on proving Maxwell's theory (although the actual prize had expired uncollected in 1882). He used a Ruhmkorff coil-driven spark gap and one-meter wire pair as a radiator. Capacity spheres were present at the ends for circuit resonance adjustments. He also showed that for the experiment to work the two loops had to have the same dimensions. His receiver was a simple half-wave dipole antenna with a micrometer spark gap between the elements. This experiment produced and received what are now called radio waves in the very high frequency range.

Between 1886 and 1889 Hertz would conduct a series of experiments that would prove the effects he was observing were results of Maxwell's predicted electromagnetic waves. Starting in

November 1887 with his paper "On Electromagnetic Effects Produced by Electrical Disturbances in Insulators", Hertz would send a series of papers to Helmholtz at the Berlin Academy, including papers in 1888 that showed transverse free space electromagnetic waves traveling at a finite speed over a distance. In the apparatus Hertz used, the electric and magnetic fields would radiate away from the wires as transverse waves. Hertz had positioned the oscillator about 12 meters from a zinc reflecting plate to produce standing waves. Each wave was about 4 meters long. Using the ring detector, he recorded how the wave's magnitude and component direction varied. Hertz measured Maxwell's waves and demonstrated that the velocity of these waves was equal to the velocity of light. The electric field intensity, polarity and reflection of the waves were also measured by Hertz. These experiments established that light and these waves were both a form of electromagnetic radiation obeying the Maxwell equations. Hertz also described the "Hertzian cone", a type of wave-front propagation through various media.

Hertz helped establish the photoelectric effect (which was later explained by Albert Einstein) when he noticed that a charged object loses its charge more readily when illuminated by ultraviolet radiation (UV). In 1887, he made observations of the photoelectric effect and of the production and reception of electromagnetic (EM) waves, published in the journal *Annalen der Physik*. His receiver consisted of a coil with a spark gap, whereby a spark would be seen upon detection of electromagnetic waves.

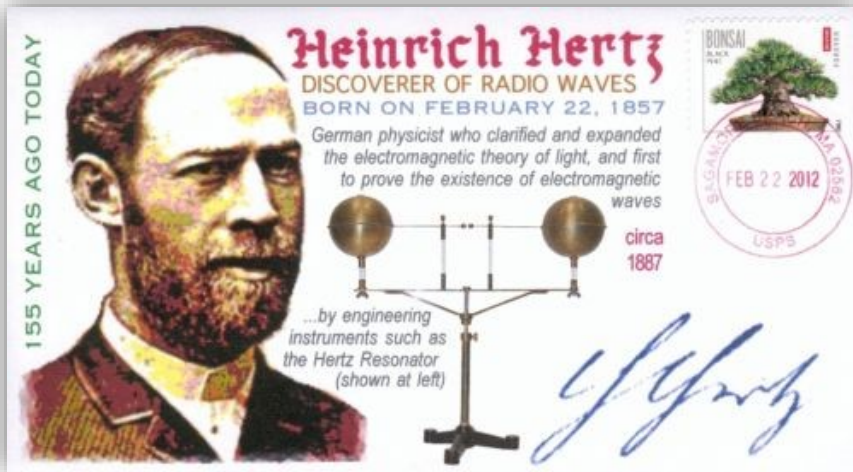
Hertz's first radio transmitter: a dipole resonator consisting of a pair of one meter copper wires ending in 30 cm zinc spheres. When an induction coil applied a high voltage between the two sides, sparks across the center spark gap created standing waves of radio frequency current in the wires, which radiated radio waves. The frequency of the waves was roughly 50 MHz, about that used in television transmitters.



Hertz measured Maxwell's waves and demonstrated that the velocity of these waves was equal to the velocity of light.



January 2018



He placed the apparatus in a darkened box to see the spark better. He observed that the maximum spark length was reduced when in the box. A glass panel placed between the source of EM waves and the receiver absorbed UV that assisted the electrons in jumping across the gap. When removed, the spark length would increase. He observed no decrease in spark length when he substituted quartz for glass, as quartz does not absorb UV radiation. Hertz concluded his months of investigation and reported the results obtained. He did not further pursue investigation of this effect, nor did he make any attempt at explaining how the observed phenomenon was brought about.

Hertz did not realize the practical importance of his radio wave experiments. He stated that, "It's of no use whatsoever this is just an experiment that proves Maestro Maxwell was right—we just have these mysterious electromagnetic waves that we cannot see with the naked eye. But they are there." Asked about the ramifications of his discoveries, Hertz replied, "Nothing, I guess." He is also quoted as saying: "I do not think that the radio waves I have discovered will have any practical application."

Hertz's proof of the existence of airborne electromagnetic waves led to an explosion of experimentation with this new form of electromagnetic radiation, which was called "Hertzian waves" until around 1910 when the term "radio waves" became current. Within 10 years researchers such as Oliver Lodge, Ferdinand Braun, and Guglielmo Marconi employed radio waves in the first wireless telegraphy radio communication systems, leading to radio broadcasting, and later

television. Today radio is an essential technology in global telecommunication networks, and the transmission medium underlying modern wireless devices.

Cathode Rays

In 1892, Hertz began experimenting and demonstrated that cathode rays could penetrate very thin metal foil (such as aluminum). Philipp Lenard, a student of Heinrich Hertz, further researched this "ray effect". He developed a version of the cathode tube and studied the penetration by X-rays of various materials. Philipp Lenard, though, did not realize that he was producing X-rays. Hermann von Helmholtz formulated mathematical equations for X-rays. He postulated a dispersion theory before Röntgen made his discovery and announcement. It was formed on the basis of the electromagnetic theory of light. However, he did not work with actual X-rays.

Nazi Persecution

Heinrich Hertz was a Lutheran throughout his life and would not have considered himself Jewish, as his father's family had all converted to Lutheranism when his father was still in his childhood (aged seven) in 1834.

Nevertheless, when the Nazi regime gained power decades after Hertz's death, his portrait was removed by them from its prominent position of honor in Hamburg's City Hall (Rathaus) because of his partly Jewish ethnic ancestry. (The painting has since been returned to public display. Hertz's widow and daughters left Germany in the 1930s and went to England.

Death

In 1892, Hertz was diagnosed with an infection after a bout of severe migraines, and underwent operations to treat the illness. He died of granulomatosis with polyangiitis at the age of 36 in Bonn, Germany in 1894, and was buried in the Ohlsdorf Cemetery in Hamburg.

Hertz's wife, Elisabeth Hertz née Doll (1864-1941), did not remarry. Hertz left two daughters, Johanna (1887-1967) and Mathilde (1891-1975). Hertz's daughters never married and he has no descendants.



I do not think that the radio waves I have discovered will have any practical application



Surrey Amateur Radio Club

Industry Canada
BASIC AMATEUR RADIO
Qualification Course

What Can I Do With My Radio License?

- | | |
|---|--|
| • Long range communications anywhere for free without commercial infrastructure | • Enhance your personal and your community's preparedness in an emergency |
| • Use satellite communication to speak around the world, perhaps even to an astronaut | • Use a computer, smartphone or tablet for free worldwide digital communications |
| • Participate in 'Radio Sports' like contesting and Fox Hunting | • Practice an exciting hobby |

Learn In A Professional Setting
 Qualified, Experienced Instructors

Practical Demonstrations
 Technical Knowledge Not Required

Fee \$100
Includes Course Manual

Surrey Amateur Radio Club
 For more information on the course visit
www.ve7sar.net or contact
sarc@ve7sar.net

Course starts April 3, 2018
 8 sessions on Tuesdays 6:30pm—9:30pm
 plus one optional Saturday workshop
 Surrey Fire Training Centre
 14901 64 Avenue, Surrey, BC

January 2018



Back to Basics

John Schouten VE7TI

From The Basic Question Bank

Over the past few issues we have examined Capacitive and Inductive Reactance and last month Impedance. This month a look at the term that applies to a capacitor and inductor when they are combined in a series or parallel circuit.

B-005-012-001

**Resonance is the condition that exists when:
(select one correct answer)**

- a. resistance is equal to the reactance
- b. inductive reactance and capacitive reactance are equal
- c. Inductive reactance is the only opposition in the circuit
- d. the circuit contains no resistance

Resonance occurs in an electronic circuit at a particular resonant frequency when the impedance of the circuit is at a minimum in a series circuit or at maximum in a parallel circuit (or when the transfer function is at a maximum). Resonance in circuits is used for both transmitting and receiving wireless communications such as television, cell phones and radio.

At resonance, the series impedance of the two elements is at a minimum and the parallel impedance is at maximum. Resonance is used for tuning and filtering, because it occurs at a particular frequency for given values of inductance and capacitance. It can be detrimental to the operation of communications circuits by causing unwanted sustained and transient oscillations that may cause noise, signal distortion, and damage to circuit elements.

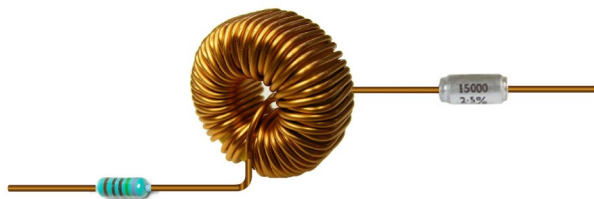
Parallel resonance or near-to-resonance circuits can be used to prevent the waste of electrical energy, which would otherwise occur while the inductor built its field or the capacitor charged and discharged. As an example, asynchronous motors waste inductive current while synchronous ones

waste capacitive current. The use of the two types in parallel makes the inductor feed the capacitor, and vice versa, maintaining the same resonant current in the circuit, and converting all the current into useful work.

An RLC circuit (or LCR circuit) is an electrical circuit consisting of a resistor, an inductor, and a capacitor, connected in series or in parallel. The RLC part of the name is due to those letters being the usual electrical symbols for resistance, inductance and capacitance respectively. The circuit forms a harmonic oscillator for current and resonates similarly to an LC circuit. The main difference stemming from the presence of the resistor is that any oscillation induced in the circuit decays over time if it is not kept going by a source. This effect of the resistor is called damping. The presence of the resistance also reduces the peak resonant frequency of damped oscillation, although the resonant frequency for driven oscillations remains the same as an LC circuit. Some resistance is unavoidable in real circuits, even if a resistor is not specifically included as a separate component. A pure LC circuit is an ideal that exists only in theory.

There are many applications for this circuit. It is used in many different types of oscillator circuits. An important application is for tuning, such as in radio receivers or television sets, where they are used to select a narrow range of frequencies from the ambient radio waves. In this role the circuit is often referred to as a tuned circuit. An RLC circuit can be used as a band-pass filter, band-stop filter, low-pass filter or high-pass filter. The tuning application, for instance, is an example of band-pass filtering. The RLC filter is described as a second-order circuit, meaning that any voltage or current in the circuit can be described by a second-order differential equation in circuit analysis.

The three circuit elements can be combined in a number of different topologies. All three elements in series or all three elements in parallel are the



simplest in concept and the most straightforward to analyze. There are, however, other arrangements, some with practical importance in real circuits. One issue often encountered is the need to take into account inductor resistance. Inductors are typically constructed from coils of wire, the resistance of which is not usually desirable, but it often has a significant effect on the circuit.

An LC circuit, also called a resonant circuit, tank circuit, or tuned circuit, is an electric circuit consisting of an inductor, represented by the letter L, and a capacitor, represented by the letter C, connected together. The circuit can act as an electrical resonator, an electrical analogue of a tuning fork, storing energy oscillating at the circuit's resonant frequency.

LC circuits are used either for generating signals at a particular frequency, or picking out a signal at a particular frequency from a more complex signal; this function is called a bandpass filter. They are key components in many electronic devices, particularly radio equipment, used in circuits such as oscillators, filters, tuners and frequency mixers.

A series resonant circuit provides voltage magnification.

A parallel resonant circuit provides current magnification.

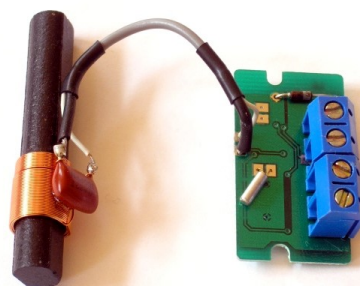
The correct answer to our original questions is therefore:

b. inductive reactance and capacitive reactance are equal.

If you're puzzled by a particular portion of the question bank, send an email. We'll do our best to explain it in simpler terms.

Our next Basic licensing course starts Tuesday, April 3rd.

~ John VE7TI



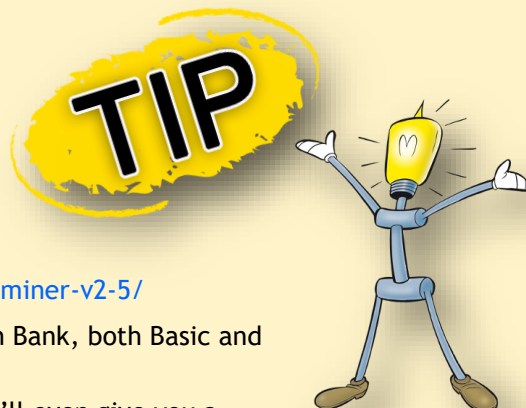
LC circuit consisting of ferrite coil and capacitor used as a tuned circuit in a basic receiver

Study Links

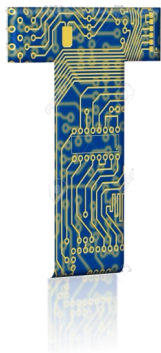
Whether you are new to the hobby or brushing up on skills, you should find these study links helpful:

1. RIC-7 is the entire up-to-date Industry Canada (IC) Basic Question Bank.
<http://tinyurl.com/CanadaBasicQB>
2. There is a RIC-7 that has some explanations along with the questions.
[RIC-7 2014rev08.05 with explanations.](#)
3. The Amateur Radio Exam Generator is at:
https://www.ic.gc.ca/eic/site/025.nsf/eng/h_00040.html
4. The ExHaminer Study software for Windows is at: <https://wp.rac.ca/exhaminer-v2-5/>
5. The Ham Study website has a flash card approach to learning the Question Bank, both Basic and Advanced. It is at: <https://hamstudy.org>

Contact SARC if you wish to write the Basic or Advanced Exam. If you pass we'll even give you a year's free membership!



January 2018



Tech Topics

Mobile Transceiver Installation Basics

Mobile installations can be complicated, whether it is for a complex rover rig setup or just a relatively simple two meter FM installation. Here are some lessons that I have learned in that area over the years.

Getting power to the rig

Connect directly to the battery. This provides a degree of filtration against alternator whine and ignition noise. A direct connection allows you to use your gear without turning the ignition on, though you must take care to turn the radios off or you will end up with a dead battery. Some rigs have an auto-off function that solves this problem.

I suggest putting fuses on both legs of the power lines as close to the battery as possible. This protects your equipment and your vehicle if you have a catastrophic short circuit. In addition, you'll need individual fuses for each piece of equipment. Don't forget to stock up on extra fuses too. Check out the accompanying photos to see the installation I recently did in my Toyota truck.

Cigarette lighter circuits are light duty and are usually unsatisfactory for radio installations. If you must use one you should reduce power on the rig to limit the current draw. There are several power distribution panels on the market, and nearly all of them use Anderson PowerPole® connectors. They make a much better distribution system than a cigarette lighter socket.

Anderson PowerPoles are the national standard for many organizations and a wide variety of accessories using them are available. These panels usually have individually fused circuits and some even provide audio alerts for low voltage. When doing a mobile installation I prefer to put in a power panel to provide for future needs. The panels come in handy for connecting other radio's, a GPS, a power inverter or other accessories.

Routing cables:

Getting cable through a firewall can be a hassle, but it can be done. Most vehicles have holes in the firewall that are sealed with plastic or rubber plugs. Once you have determined that you can get to both sides of the plug, pull it out and punch an appropriate size hole through it using a gasket punch. Use a hole that provides a snug fit to the cable. Inexpensive gasket punches are available at Harbor Freight, item 6770-9VGA. This gives you a clean hole for your cable and will prevent the grommet from splitting. A straightened wire coat hanger can make a wonderful tool to pull wires through. Once the cable is in place, seal around the cable opening with RTV or silicone caulk. This will reduce drafts, engine noise and the possibility of carbon monoxide entering the cabin. When running cables inside the engine compartment, be sure to avoid hot exhaust component and moving parts such as the steering linkage. Likewise, if you are routing cables under the dashboard make sure that they do not rub against or interfere



This is the fuse box installation in my 2005 Toyota Tundra. The box is a small fishing tackle box with some partitions removed. It is affixed to the air filter housing with Superlock® fasteners. The large PowerPole® connectors enable me to unhook the power in an emergency. Note that this container even provides for the storage of spare fuses.

with moving parts such as heater control cables, brake cables, etc. Installing cables inside the vehicle can require some effort.

You can usually lift trim panels on the door sills by removing screws. If you are lucky, there will be a cable trough under the panel. An electrician's snake can be handy for pulling wires, especially under carpet or between the headliner and roof. If you route cables under carpet do not route under heavy wear areas.

Where to put the rig:

The placement of the transceiver is critical. It should be in a convenient location for operation and should not interfere with vehicle controls. Many mobile rigs have remote control heads which makes installation a lot easier. The only downside to remote heads is that the speaker is in the main body of the radio and it may be hard to hear. This problem is solved by installing a small mobile speaker. If possible, place the rig and control head where it cannot be readily seen from outside the vehicle. This will reduce the chances of theft.

I prefer to have the microphone cord routed so it comes from behind me and has tension on the cord when I am using it. This allows me to drop the microphone without it getting tangled in the controls. I learned this lesson the hard way when I wrapped a mike cable around the steering wheel and ended up in the ditch! Securing the microphone can be a distraction when driving, so you might wish to use self-adhesive Velcro rather than the catches that come with the gear. I like to put the scratchy side of the Velcro on the dashboard or console so I can feel it with the backs of my fingers when I am stowing the microphone. I also use Velcro to secure brackets for control head mounts. Radio Shack sells Superlock Fasteners that are a lot like Velcro, but much heavier and stronger. It is not cheap, but it allows you to mount gear without drilling holes in the car if you have a clean flat surface.

Mounting an antenna:

Antenna mounts can be tricky, especially with newer cars. If you are willing to punch a hole in a fender or the roof, use a Greenlee punch or a metal-cutting hole saw. This gives you a nice clean hole that is easier to weatherproof. If you own a pickup, consider the GeoTools pickup stake hole mounts.

Their web page is at: <http://www.geotool.com/antmount.htm>. I've used two of them on my 2005 Toyota Tundra. They are beautifully made and it is easy to make a clean installation with them. You should take care when routing antenna cables. They also must be kept away from moving parts, exhaust parts and sharp edges. Consult your auto dealer to determine the location of on-board computers and give them a wide berth for fear of interfering with vehicle electronics.

Do yourself a favor and tag your antenna lines at the radio end. This is especially important if you have more than one antenna. If the antenna connections on the rig are not easily accessible, you might consider running a piece of coax to a more easily accessible location and installing an antenna splitter switch there. This will enable you to switch to a portable antenna should the need ever arise.

The next step is to check the continuity between major body parts such as the roof, fenders, trunk lid and hood. If you do not have continuity between these parts it will affect the antenna ground plane and reduce ignition noise shielding. Fortunately, it is usually easy to bond these components with small pieces of ground braid.

Once everything is in place, check the SWR and make appropriate adjustments. An antenna analyzer is the ideal tool for this, but you can also use a SWR bridge that registers in the appropriate frequency range.

~ A Communicator Reprise: March 2011



Power panel - This is one of two power panels in the Tundra. The other one is located on the transmission tunnel just forward of the passenger seat. Each will handle 30 amps and has a main fuse plus individual circuit fuses. These panels are available from the folks at <http://www.dcpwr.com>.



Mounting the control head - Here's a view of the control head for my IC-706MKIIG mounted on the dash of the Tundra. I was able to snake the remote cable under the dashboard and out through a gap by the windshield. The mounting bracket is bolted to an aluminum mount that is affixed to the dashboard with Velcro. The Velcro on the top of the control head is to affix a sun shield. This shield is necessary to keep the unit from overheating in direct sunlight. It extends over the defroster vents and directs cold air to the control head.

January 2018

January 2018

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<div> <p>Our new website goes LIVE today!</p> <p>www.ve7sar.net</p> </div>	1	2	3	4	5	6 08-1000 Club Social: Kalmar Family Restaurant—King George Blvd & 81st Avenue CONTEST: ARRL RTTY RU
	7 CONTEST: ARRL RTTY RU	8	9 1930 SEPAR Net 2000 SARC Net	10 1900 SARC Monthly General Meeting	11	12
	13 08-1000 Club Social: Kalmar Family Restaurant—King George Blvd & 81st Avenue CONTEST: NA QSO Party CW	14 CONTEST: NA QSO Party CW	15	16 1930 SEPAR Net 2000 SARC Net	17	18
	19	20 08-1000 Club Social: Kalmar Family Restaurant—King George Blvd & 81st Avenue CONTEST: NA QSO Party SSB	21 CONTEST: NA QSO Party SSB	22	23 1930 SEPAR Net 2000 SARC Net	24 SARC Exec Meeting
	25	26 08-1000 Club Social: Kalmar Family Restaurant—King George Blvd & 81st Avenue CONTEST: BARTG RTTY Sprint	27	28 CONTEST: BARTG RTTY Sprint	29	30 1930 SEPAR Net 2000 SARC Net
<div> <p>For details on all SARC events, go to ve7sar.net</p> <p>For details on all SEPARS events, go to separ.shutterfly.com/calendar</p> </div>						



Page 13—News You Can Lose

The Lighter Side of Amateur Radio

World Power Grid Chase 2018

NEWINGSTEAD, VT — The National Radio Retransmission Legion today unveiled plans for 2018's much anticipated amateur radio operating event.

The "World Power Grid Chase 2018" will encourage ham radio operators to get on the air from utility poles and electrical sub-stations around the world. Each location is identified by a unique 6 character code which every operator will be forced to look up multiple times during an activation because, honestly, they're pretty hard to remember.

NRRL CEO Bob Gilligan says the "World Power Grid Chase 2018" idea has been in the works for some time. "Admittedly, we struggled a bit to come up with something with the same strong sex appeal as 2016's NPOOTA (National Pizza Ovens On The Air). I realized it's hard to surpass the combined excitement of a stuffed crust pepperoni pizza and RF. But we really think we're onto something electrifying now!"

Here's How You Can Get In On The World Power Grid Chase 2018:

The goal of the NRRL World Power Grid Chase is simple - work as many portable stations set up at utility poles and electrical sub-stations as possible. Then, upload your contact to the NRRL's Logbook of the Globe (LOG). And if you're not registered with LOG, now's a good time to start! It's absolutely free and will only take 2.75 hours to register. Soon, you'll get a postcard in the mail with a password - but that's not the password you use to login. So watch for an email blast from NRRL with connection information on how to retrieve your access code and get into the double-blind Linux server. Then you're ready to start your Power Grid chase!

Every new power pole or electrical substation you contact counts towards your monthly total. And if you set up a portable station and activate a power pole or electrical substation (note: ground rods strongly encouraged) you get double the points!

Each month, you can check out the leaderboard and see how your QSO totals rank among your fellow hams. We'll do all the hard math work for you because after getting set up with Logbook of the Globe - you'll be bushed!

Frequently Asked Questions

Q: Can I set up at any power pole or electrical substation? Does it have to be one on my property?

A: Any available power pole or electrical substation is available for activation.

Q: Can I set up at a power pole or electrical substation on my in-laws property?

A: Any available power pole or electrical substation is available for activation.

Q: How close do I need to be to the power pole or the electrical substation?

A: You should be within 20 feet, unless you are feeling the tiny hairs on the back of your neck stand up - then it is advised to move.

Q: I have an electrical power generating dam near my QTH. Can I set up there?

A: We have not yet implemented The DAM WORLD POWERGRID CHASE at this time.

Q: Can I activate the power meter on the side of my house?

A: Not sure we understand the question.

Q: How many power poles and electrical substations are available to be activated?

A: So, so, so many. And you'll find that some are literally in the middle of nowhere! We suspect some hams will drive around the United States trying to activate all of them. But surprise! You can't drive to the South Pole.

Q: Will you have operating awards at the end of the year for the most International Power Grid contacts?

A: There will be terrific prizes available! (Fees apply and do not include shipping or handling.)

*~ WBØRUR, on the scene
with thanks to HamHijinks*

January 2018



At The Last SARC Meeting

December Christmas Party

Saturday, December 9, 2017

Our December meeting is a Christmas Party and this year it was held at the Newlands Golf and Country Club on 48th Avenue in Langley. About 50 members attended, many with their 'significant other'. A buffet lunch was served complete with turkey and salmon and a varied dessert table. Many received door prizes in the draw and Bhim Sen Nair VA7BIM was the lucky recipient of the Handheld donated by Fleetwood. Thank you to our other sponsors, including Burnaby Radio, who donated two gift certificates. A very special thank you to Jinty Reid VA7JMR for her efforts to make this year's event memorable.



The 'Oak Room' at Newlands was the venue this year. Below, guests of honour again this year, and one of our strongest supporters MLA Marvin Hunt and his wife Ruth.



Top, the very popular dessert table featured cakes, pies and a variety of other holiday goodies. Right, door prize winner Bhim Sen Nair receives his new handheld from event organizer Jinty Reid.

January 2018

Operations & Training Centre News

John Brodie VA7XB



A Step Closer To Purchase!

Members of the OTC committee met on Sunday Dec. 17th to further discuss spending priorities for OTC funds. Attending were: Kjeld, Sheldon, Dan, Stan, Ralph, Nell, Art Witmans John Schouten, John Brodie.

John B expressed the hope that at this meeting the group would make some decisions which could be taken to the Executive for formal approval in the coming week. It was noted that the objective of the committee should be to fully spend the funds available to SARC by the end of this fiscal year (May 31st). A spreadsheet was projected on the wall for discussion of alternatives. Sheldon announced that he had prepared a separate spreadsheet with additional ideas for purchases, all of which were discussed later in the meeting.

A number of good suggestions were presented and a lively debate ensued. A few key decisions were made, with other items tabled for future meetings. Summarized below are decisions made and/or options considered.

The objective is to have 3 fully-functioning stations at the OTC to accommodate the needs of: a) experienced operators using the latest SDR gear and b) those less experienced members who will be more comfortable with conventional radios. It is intended that this equipment be used for both training and actual operation. The long-awaited

Flex 6600 will fulfill the expectations of the former group whereas the donated IC-756 Pro III will provide a more conventional environment for the second group. In order to fill the gap for the 3rd station, the committee is recommending purchase of an IC-7610 which can be characterized as a state-of-the-art radio having a more conventional look and feel. Three larger monitors will also be purchased, one for each of the 3 stations, to provide improved display with less

crowding of the multi windows required by the logging software. Tower standoffs and a new balun for the TH7 have also been recommended for immediate purchase.

The debate got more interesting when considering the value of linear amplifiers v the benefits of gain antennas, especially since both of these items are pricey if we follow the fundamental dictum of having the most reliable and most "bullet proof" equipment available for use by a wide variety of potential operators. One valid school of thought is that money is better spent on antennas than on power per se. However, fantasy hits reality when considering the options, as under the current budget we can have one but not both. At one extreme, the committee is considering a SteppIR DB-36 beam for 6-40 m and at the other a rotatable dipole; the former would require a second tower to be erected but the latter could likely be stacked on the existing tower above the TH7. Similarly with linear amplifiers, there is a wide range of equipment available. A decision on amplifier v antenna was tabled pending an assessment of SARC's future at this location including the likelihood that a second tower would be allowed.

Also at the top of the wish list are generators for emergency use and laptop computers both of which will do double duty at the OTC and at Field Day. The committee was agreed that loss/theft insurance should be purchased to cover not only the more costly items but also the repeater installation. Items unaffordable at this time will be considered for next year's Gaming grant application.

Thanks to all those who attended and offered their well-considered opinions in a respectful manner.

~ John VA7XB

*SteppIR DB-36
(For 40 and 80m
capability - Is it a
pipe dream)*



Radio-Active

John Brodie VA7XB

Profiles of SARC Members



Art Witmans VE7WAE was born in Oestgeest, Netherlands. The family lived in Gouda (think of the cheese) and then later in Haarlem. He went to school in Amsterdam where he studied electronics at a level comparable to BSC Engineering with work experience at Siemens in Karlsruhe, Germany. There he participated in the development of the public address system for the 1972 Olympic games in Munich, Germany.

Later, Art worked at a factory in Zandvoort, Netherlands but the job was not to his liking. Unfortunately, due to the oil crisis and conflict in the Middle East, nobody was hiring. Meanwhile, the

University of Saskatchewan, Plasma Physics Laboratory (a nuclear fusion research lab), advertised for a technician and Art was hired. His intention was to try it out for a few years, see if he liked Canada and get paid at the same time. This job was quite interesting, but after a while funding became uncertain and it was time to look around.

Northern Telecom needed a manufacturing engineer and he got the job which lasted 5 years, after which the factory was sold. He landed a similar job with Nortel and later with an engineering company in Calgary but

**Art Witmans
VE7WAE**



This picture was taken on the prairie near Eston, Saskatchewan while having a QSO with Marc, ON4ACH in Belgium.

January 2018

subsequently found a project engineering job more to his liking at Pirelli Cables in Surrey. That continued until the factory was closed in 2000 and it was time to retire.

Art enjoys fishing and camping in the great Canadian outdoors, with temperatures from +40C to -40C and, of course, ham radio while climbing the hills around Calgary with microwave gear to make QSOs on 10GHz and above. His future retirement plans include travelling, sailing and more amateur radio. Other hobbies are reading, sailing, hiking and Saturday mornings Koffee-Klatch.

Regarding Amateur radio, Art likes to try different aspects of the hobby. Presently, he is experimenting with digital modes such as WSPR and FT8. He tried meteor scatter but only succeeded with one contact in Courtenay via reflection from an airplane.

Art likes to travel with his trusty old FT897D and an ATAS25 mounted on top of the car. A few years ago he was standing on a hill near Slave Lake, Alberta and talked to a ham in Belgium who told him he had the strongest signal on the band. He also likes to see how far he can communicate with QRP - his distance record using 5 watts was in 2015 when he successfully made contact on 10m with a ham in Argentina.

Via satellite, Art confirmed contacts with Alaska and Colorado using a 5 watt handheld and a discone antenna and recently using the FT817ND with California on SO-50. He plans to improve his hardware for satellite work and attempt QSOs at higher latitudes where HF has difficulty reaching - maybe there is somebody up north with similar interests. Once his WSPR (weak signal propagation reporter) signal was received and reported by a weather station in the Arctic (see <http://wsprnet.org/drupal/wsprnet/map>) so who knows what else is out there?

Regarding the future of amateur radio, Art is concerned about the average age of the members and feels we need to find ways to make the younger generation drop their phone and pick up a radio - possibly through software development, Raspberry Pi and the new digital technologies will be the key.

~ John VA7XB

Art had his mobile HF ready to test the newly installed antennas and subsequently made the first official contact from the Operations and Training Centre (OTC) in June 2016. He spoke to Kees Kaper VE5KKZ in Eston, Saskatchewan





Emergency Comms

Ham Radio Making A Difference

Radio Hams Propose Better Warning During Calamities

The Millennium Post reports on a proposal to improve emergency communications sent by West Bengal radio amateurs to the state Disaster Management department

The West Bengal Radio Club that works in close coordination with the state government during natural calamities has sent a proposal to the state Disaster Management department to build up the infrastructure for linking the amateur radio repeater with internet for uninterrupted connectivity during a natural disaster.

"In areas struck by a natural disaster, the entire communication system goes in disarray. An amateur radio repeater is an electronic device that receives a weak or low-level amateur radio signal and retransmits it at a higher level or higher power, so that the signal can cover longer distances without degradation. If this repeater can be linked with uninterrupted internet at the nearest place of the affected area where it is available then communication will be at the very best," Ambarish Nag Biswas VU2JFA, founder secretary of Amateur Radio Club said.

Licensed ham radio operators have a technology named Echolink installed on their Android phones and by using this they can

access any repeater that is connected with the internet.

The Radio club accessed the repeater of Amateur Radio Club based in California and conducted a mock drill on tsunami in three coastal areas of Bengal-North 24 Parganas, South 24 Parganas and East Midnapore in presence of the district administration on November 24. An interface device was made and internet was linked with ham radio. The mobile towers were deactivated at seven points in the coastal areas of these three districts and it was illustrated that how this technology can be used for uninterrupted connectivity. A number of state government departments like Irrigation, Power, Health etc took active part in the mock drill that was organised with the initiative of state Disaster Management department.

Read the full story at

<http://www.millenniumpost.in/kolkata/west-bengal-radio-club-bats-for-better-warning-during-calamities-275468>



Kalmar Koffee Klatch Reminder

The Surrey Amateurs weekly social gathering is on Saturday at the Kalmar Restaurant at 80th and King George Boulevard between 8 and 10 am. You don't have to be a SARC member to participate. Bring your significant other, bring your family, see old friends and enjoy the friendship.

Surrey Emergency Program Amateur Radio



The SEPAR Report

Roger Andrews VA7VH - SEPAR Coordinator

Disaster Preparedness for Amateur Radio

Save yourself!

In any emergency, before you can even think about contributing your skills as an Amateur Radio Operator, you need to save yourself and your family first. You can't possibly consider turning on the radio if you haven't got what you need personally to survive. So in order of importance, you come first, then family, pets and only after those are taken care of can you consider making your way to a radio. If you are well prepared, this process can be very quick, since it will already be completed as part of your emergency plan.

There are a lot of places on the internet that can give you ideas for personal Grab & Go kits and other personal preparedness kits. I'm not going to try to put together a list of items, for your personal kit, because it's been done over and over and over. The thing with all those lists is that they all vary in some way. They all vary because everyone has different needs. Some people have medications. Some have pets and quite a few it seems, have guns! Most of the USA kit recommendations that I have seen talk about personal security preparedness as part of the necessities of a kit. I agree completely that personal security can be a consideration for people and it should be part of your thought process. In Canada you'll just have to replace the words "pointy stick" any time you read the word "gun". All joking aside though, as you look through some of the results you'll find when you do a Google search on "Grab and Go" kits or "Preparedness Kits", you will certainly find things on those lists

that don't seem to apply to you. Don't discount any of the ideas too quickly. Give them a little thought. You might be surprised at the sense that some of them make. Every person's situation is different and that's why I'm not itemizing a list for you. Just make sure you are prepared! QSL?!

Now it's the radio's turn!

If you plan on making yourself available for Amateur Radio Communications if a disaster strikes then you will need to prepare a few things in addition to the personal preparedness kit you have developed.

Don't move onto this preparedness list until you and your family are personally prepared. You can't help someone else, if your own life is in turmoil. Once you are personally ready then, and only then, do the following:

1. Train regularly with SEPAR. While it's true that presently most of our training has been on the 2 metre Nets, it is still important. Those of you that never check-in and then believe you will be an asset during a real disaster will surely find yourself in a confusing situation. The adage YOU PLAY LIKE YOU PRACTICE, may be sports oriented, but it applies to much of life. Those of you that have listened to the Nets over the past few weeks have heard a few good situations come up - people checking in and interrupting to get their personal message out, net control having technical troubles and

disappearing for a time, and scrambling to amend a simplex frequency when one becomes busy just after it's announced to be used, and the QSY has already started.

2. Don't depend on computers, cellphones, iPads and the internet to store and acquire the information you might need in a disaster (Such as the location of City assets- Fire Halls, Recreation Centres). The important stuff should be on paper.
3. Use paper to do Net Control and not computer software like Excel. If you prefer the computer normally then use paper on occasion to make it easier to switch to paper when it is needed.
4. While the City of Surrey provides us with Grab & Go Kits, It wouldn't hurt to have your own Amateur Radio G&G Kit to supplement your personal G&G Kit. Amateur Radio works well in disasters because so many operators have their own equipment. There is excellent redundancy in the system. Some items to include:
 - Portable radio, antenna and power supply or batteries.
 - If you use HF then you'll need (or highly recommended) a headset or earphones (Also useful in case you are in a noisy are)
 - Cables and Extension cords.
 - Pencils and Paper (Net Control sheets are handy to have)
 - Clipboard (Once in the field, there is no guarantee you'll have a counter to work on.)
 - Radiogram forms (not required, but easier than writing on a blank page)
 - Instructions that you feel you might need such as the list of ARRL numbered radiograms and your list of City of Surrey buildings (Rec Centres and Fire Halls.)
 - Small tools (multi-tip screwdriver, multitools, etc.)
 - EMBC (Emergency Management BC Card).
 - If you have a SEPAR Vest then keep it with your radio G&G kit.
 - Important phone numbers and frequencies. (There is a list of assigned frequencies on separ.net)
 - A Surrey map. Remember Google maps needs a cellular connection. A paper is a good backup.
 - Flashlight
 - A way to stay dry in wet weather. We have no shortage of rain in Metro Vancouver (Ponchos are very small to store, and cheap to buy.)
5. Let SEPAR know what you are good at. Not everyone will be needed on a radio. Some of you are antenna specialists. Others are good at fixing minor radio issues in a pinch or organizing a group? What are you good at? Some people are better at one job than another person. Volunteer that information.
6. Depending on the situation the help you are needed to give could change.



Surrey Emergency Program Amateur Radio

January 2018

For instance:

- If you don't need to evacuate your home; Can you deploy at a shelter or EOC for a few hours? Operate from home?
 - If you must evacuate. Can you deploy from where you have evacuated to, such as a shelter?
7. Somethings that you could add to your Radio G&G kit, that should also be in your personal G&G kit, are the following items:
- Bottled water plus something to eat no like an energy bar.
 - Medications.
 - A small first aid kit. Just a couple bandages couple make a big difference in your comfort if you accidentally cut yourself.
 - Toilet paper - small packets from MRE kits are very handy and don't take up much room.
 - Moist towelettes (a quick way to clean your hands).

This list is just a few suggestions to get you thinking about what you might need. It's certainly not an exhaustive list but it should give you some ideas of where to start.

I hope everyone has had a great Holiday Season. See you in the New Year!

Weekly Nets

Every Tuesday evening at 1930 hrs (7:30pm PDT) we start a ½ hour NET on a local repeater provided by the Surrey Amateur Radio Club (SARC) on 147.360 MHz +600kHz and a tone of 110.9. There may be a simplex test or a test NTS message transmitted during the NET at the Net controllers discretion. This is an excellent opportunity to practice sending and receiving this form of messaging. Besides, it adds a little spice to the regular check-ins on the net. Please join us. NTS Radiograms can be found on the SEPAR website here, or, if you would like a fillable PDF that you can enter on your computer, you can get it from here.

Thursday nights at 19:30 hours, This Net has changed! We are no longer doing a regular 2 meter simplex Net on this night. Any plans for Thursday night will be announced on the Tuesday before. This night will now be used for optional tests. For example NTS Digital exchanges, 6 meter, 2 meter 60 cm and 220 Nets. If someone wants to do a particular net on a Thursday, then please announce it on the Tuesday before.

~ Roger VA7VH

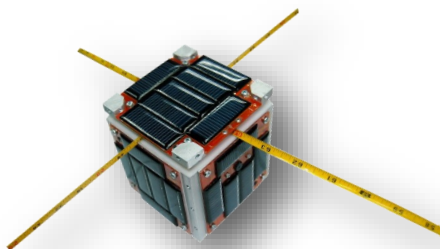


The Sun is Dimming as Solar Minimum Approaches

Last week at the Cape Canaveral Air Force Station in Florida, SpaceX launched a new sensor named 'TSIS-1' to the International Space Station.

Its mission: to measure the dimming of the sun. As the sunspot cycle plunges toward its 11-year minimum, NASA satellites are tracking a slight but significant decline in total solar irradiance (TSI). TSIS-1 will monitor this dimming with better precision than previous satellites as Solar Minimum approaches in the years ahead.

Visit today's edition of Spaceweather.com to learn more about TSIS-1 and natural variations in the sun's 11-year cycle of electromagnetic output.



Satellite News

AO-91 Commissioned Declared Open for Amateur Use!

AMSAT-NA's latest Amateur Radio CubeSat, RadFxSat (Fox-1B), now known as AO-91, has been opened for general use. AMSAT Engineering officially announced that AO-91 was ready for use at 0650 UTC on Thanksgiving Day, November 23. AMSAT VP of Engineering, Jerry Buxton, N0JY, turned over operation to Mark Hammond, N8MH, and AMSAT Operations during a contact on the AO-91 repeater during the pass over the Eastern US, AMSAT said in a bulletin.

The latest CubeSat in the Fox series was launched on November 18 from Vandenberg Air Force Base in California. Telemetry is downlinked via the DUV sub-audible telemetry stream, which can be decoded using FoxTelem software.

A 1U CubeSat, RadFxSat (Fox-1B) is a joint mission of AMSAT and the Institute for Space and Defense Electronics (ISDE) at Vanderbilt University. AMSAT constructed the rest of the satellite, including the spaceframe, on-board computer, and power system. The Amateur Radio package is similar to that currently on orbit on AO-85, with an uplink on 435.250 MHz (67.0 Hz CTCSS) and a downlink on 145.960 MHz. Thanks to AMSAT News Service

Amateur Radio-Carrying D-Star One CubeSat Among Spacecraft Apparently Lost

The first Amateur Radio satellite to employ the D-Star digital voice and data format -- D-Star One -- was among about 20 secondary payloads lost on November 28 after an otherwise nominal launch of a three-stage Soyuz 2.1 booster from the new Vostochny Cosmodrome in the far reaches of eastern Russia.

The mission carried the Russian Meteor M2-1 satellite, the primary payload, as well as a Canadian Telestar experimental satellite, and 17

other secondary payloads, including D-Star One. According to reports, a fault occurred in the sophisticated and autonomous Fregat upper stage, which, after separating from the launch vehicle, inserts multiple spacecraft into their respective orbits. A so-called "space tug," Fregat has been in service for nearly 2 decades and has suffered three previous failures. Russian space agency Roscosmos is investigating the Fregat failure.

D-Star One, the first German commercial CubeSat, carried four communication modules, two designated for Amateur Radio use.

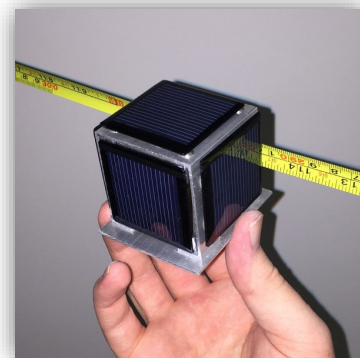
D-Star One was developed by German Orbital Systems in cooperation with the Czech company iSky Technology as part of a plan to eventually assemble a low-Earth orbit communication network.

"Hopefully, we'll get another chance to utilize D-Star communications with a satellite repeater sometime in the future," Wayne Day, N5WD, commented on the AMSAT-BB.

The Fregat upper stage functions as an orbital vehicle in its own right to access a range of orbital configurations through a series of "burns." Made up of six spherical tanks arrayed in a circle, Fregat is "independent from the lower three stages, having its own guidance, navigation, control, tracking, and telemetry systems," according to Gunter's Space Page.

The November 28 launch was only the second from the new cosmodrome.

~ AMSAT



January 2018

North Shore Amateur Radio Club



North Shore ARC

Report from the Big White Winter Rally

Keith, VE7KW and Gordon, VA7GAP, traveled to Big White Ski Resort, near Kelowna last weekend to volunteer for radio communications in support of the Big White Winter Rally.

The rally is a stage event, with cars entered from many provinces and states. It is a speed contest run on snow and ice covered forestry roads which are closed to the public. Radio communication is critical for safety and monitoring of the car locations.

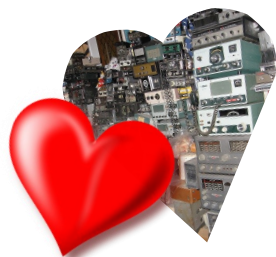
Amateur radio has proven to be the most effective radio system as to the number of operators available and the ability to communicate effectively. Thirty-two cars entered in several classes such as 4wd and 2wd. The weather was perfect for the volunteers, sunny, minus 2 by day and only down to minus 8 or so at night. For the competitors road conditions were slippery, 4 cars retired and some others got a little closer to the scenery than intended but were towed back on the road and continued, in some cases more than once! At the finish, the winning car, from Quebec, had battle damage on all four corners.



Radio communications used the VE7RBG repeater at Big White. Rally radio control was at a central location and communication was easy using HTs except at one location which was in a "dead spot" where reception was challenging. A lot of traffic was passed to and from control; at times there were few gaps to allow a break-in. Radio traffic involved monitoring course opening and closing vehicles, keeping track of the competitors at the start, en-route and finish, crowd control at the spectator locations (lots of spectators) and the rescue of crashed cars.

Fortunately there were no medical call-outs. All in all it was a great weekend, playing radio, cars, and the pubs at Big White! A good video at https://youtu.be/e78wQ_yF22s





Hardware

The Baofeng UV-5R

Loved or despised, many people are passionate about the Baofeng UV-5R. Why? Simply because it is a basic dual band radio at a very affordable price. Where once you paid \$250+ for a dual-band handheld, you now pay less than Cdn \$50, perhaps much less. The UV-5R has had a 5-year evolution.

The basics:

- Frequency Range: 65-108 MHz (Only commercial FM radio reception), VHF works from 136 to 174 MHz(both Rx/Tx), UHF works from 400 to 520 MHz (both Rx/Tx)
- Channel Names customizable and many other adjustments by using the PC03 FTDI Programming Cable (which by the way, is highly recommended)
- UV-5R model is equipped with a 1500mAh Battery (1800mAh Label); Broadband (Wide) 25khz / Narrowband (Narrow) 12.5khz Selectable
- AUTO Keypad Lock, Dual Band, Dual Display and Dual Standby
- 1(low) or 4 (high) watts output
- Selectable frequency steps of the cheap radio include 2.5, 5, 6.25, 10, 12.5 and 25 kHz
- Dual watch and dual reception, and it can store up to 128 memories; plus:
- selectable wide/narrow, battery save function, VOX, DCS/CTCSS encode, key lock and a built in flashlight.

This radio comes with:

- an SMA-Female antenna,
- flexible antenna,
- BL-5 Li-ion battery (7.4V 1500 mAh,
- belt clip and wrist strap,
- AC adapter (8.4V 600ma) and a drop-in charging tray.

Accessories , such as a hand-held mic, extra batteries, car adapter, better antenna and external antenna adapter, a programming cable and software and cases are mostly less than \$10 each.

Baofeng radios have proven to be reliable and inexpensive. Hams buy one to use just in case of emergency, camping, chatting on a repeater with other fellow amateur radio operators, and, at the price, you can keep one in your glove compartment permanently without losing to much sleep worrying about theft of your expensive gear. Moreover, the Baofeng UV-5R is the perfect first radio for a new operators after they passed their exams.

BaoFeng started to sell the UV-5R Dual Band, Dual Display radio in 2012. Since its introduction the UV-5R has seen a massive growth of its sales. There were two major releases after its launch, with the second generation being signified by BFB297 Firmware in early 2013 and the N5R firmware tweak in August of 2014.

Variations include the UV-5R v2+, UV-5RA, UV-5RE, UV-5R+ (Plus), along with several other lesser produced variants.



A lot has been written about Baofeng transceivers. They are affordable, multi-band, and deliver a pretty good bang for the buck given that they can be had new for less than Cdn\$50 (less than US\$30).

There is now a video on YouTube that claims to perform the 'Extreme Test' Holy \$3#+... you'll be surprised!

<https://goo.gl/AEX75o>

January 2018



I doubt he has a ham license but yes, this militia member uses a Baofeng Handheld.

At the end of 2013, the Baofeng UV-5R was released with a new variant featuring the inverted display series and the introduction of the BF-F8+ and its own aesthetics variants (the GT-3 and 997-S). During the fall of 2014, the Baofeng UV-5R was replaced by the brand new Baofeng BF-F8HP.

There are lots of new UV-5Rs still available. This is why today, the Baofeng UV-5R is the least expensive VHF/UHF radio ever available.

The BaoFeng UV-5R is able to operate on narrowband (12.5kHz) and wideband (25kHz). It is a dual watch receiver. The BaoFeng UV-5R has one built-in receiver but can “watch” two channels (semi duplex). Monitor two different frequencies (even on different bands (VHF/UHF)) and the radio will monitor both frequencies, giving priority to the first station to receive an incoming call.

If you purchase a Baofeng UV-5R you can listen to the FM Broadcast band, because your Baofeng will be able to receive your favourite FM station in the background. Any incoming call will be given priority insuring you never miss an important call while listening to the radio.

The BaoFeng UV-5R supports the most common Analog Tones. It supports CTCSS, DCS, and DTMF calling methods. Configuring your calling methods to call by group tones it's easy. A simple tone call is required by most repeater applications and the Baofeng UV-5R is able to supports the latest standards. The BaoFeng UV-5R can send DTMF tones. This allows for sending ANI (Caller ID) or remote commands that require DTMF tones.

You may program your BaoFeng UV-5R exactly how you want it as there are 128

programmable memory channels ready for you. And it is easy to add or remove channels from scanning list using free [CHIRP software](#). You can name the channels alphanumerically, display the frequency or a channel number

You can easily program from a PC to set-up the radio as shown in the video at:

<https://youtu.be/0mzY5vIH718>

I do recommend a better antenna. All handheld antennas are compromised and inefficient because of their length. A company called Nagoya sells an after-market antenna (model NA-771) that is about three times the length of the stock rubber duckie. It is much more efficient and very flexible so it doesn't get in the way (*see below*). Another good investment is a mobile or base antenna. You'll need an [adapter](#) (*photo lower left*) to transition from Baofeng's reverse SMA (M) to SO-239 (F). The other recommended purchases are an AA battery holder, so that when your power drains you can simply replace the battery with dry cells, and a programming cable and perhaps a car adapter which powers your radio from your car battery.

Hopefully you found this useful. When I bought my first handheld, a single-band 2m iCom, it cost Cdn \$600 from a local dealer, and had a whole lot fewer features. Is the UV-5R the best handheld out there? No, but there are lots of choices out there, and I don't think this handheld will disappoint you at the price; I've even worked satellites with it.

~ John VE7TI

The Nagoya antenna referred to in the article—click on the ad below for a link to the site.



You may wish to use your Baofeng with a mobile or base antenna. You'll need an inexpensive adapter like this one [from eBay](#).



For Baofeng UV5R UV-82 144/430 MHz NA771 SMA Antenna

Brand New

★★★★★ 5 product ratings

\$1.39

Buy It Now

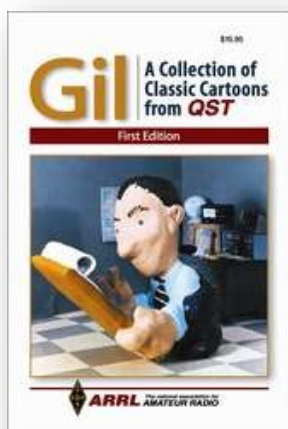
Free international shipping

10 new & refurbished from \$1.39

From China

Tidbits...

January 1st our new SARC website <http://ve7sar.net> makes its debut. Jeremy VE7TMY has been busy for the past while moving files from the previous site. He's done a great job. Information that rarely changes will remain on the SARC website. For everything else, be sure to check out our blog at ve7sar.blogspot.ca



John Brodie has negotiated a fabulous arrangement for us with ARRL. They are permitting us to publish excerpt cartoons from their collection entitled: "Gil—A Collection of Classic Cartoons from QST".

This publication is more than a book of illustrations. It is a tribute to a legend, a man who created more than 1500 pieces of art for QST. Gil's work became a tradition. In tribute to this talented, creative and devoted artist and ham, the ARRL presents in this book a reprint of a portion of the best of his work.

About the Artist: Philip "Gil" Gildersleeve, W1CJD, contributed over 1500 cartoons and drawings to QST and the ARRL for almost 40 years. Gil was an avid radio amateur, devoted family man and exceptionally

active in the community. For several years he worked as a radio operator aboard merchant ships and later on was News Editor of the Middletown (CT) Press. Although Gil became a silent key in 1966 his characters live on. Still today, his conceptions remain alive in the minds of both old-timers and newcomers to Amateur Radio.

You'll see a few of these pop-up from time to time on our pages.



A Message From...

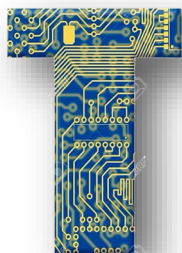
Hi John

Hope things are going well. I read your article on the new Ham joining SEPAR. Great article and as usual The Communicator is packed with lots of stuff. Please pass on my regards to all for the upcoming Christmas Season. Donna and I are enjoying things here in Port Alberni since our move in June 2016. I'm active with the Arrowsmith Amateur Radio Club. Our website is <http://www.arrowsmitharc.ca>

All the best and hope to hear you on the air, 73

~ John McKay VE7RB

January 2018



Tech Topics

John Brodie VA7XB

Antenna Modelling... A Learning Experience

My OCF dipole came down in the wind over a year ago, so I decided it was time to replace it with something else, at least for 80m. I have lots of trees in the yard, but the high ones really don't lend themselves to a horizontal wire because they are all clustered together. I researched other options and decided I could probably make an 80 m inverted L work. Since my trees are all over 30 m high with the lower branches stripped off, I figured they should accommodate 20 m or more wire in the air, especially since only part of the antenna is vertical. The relative proportion between

vertical and horizontal legs is apparently not too critical to its performance. This antenna is actually a quarter-wavelength vertical therefore it requires counterpoise, or ground radials.

While the weather was good over the summer I began the project by installing a 1½" ABS conduit below ground from the house to the location of the antenna feed point, so that the coax would not have to run over the surface of the ground. Next challenge was to get attachment points up in the trees, a job which requires a tree climber - a big challenge as tree climbers are very casual about returning calls and showing up for the job. Finally it all came together just as the weather started to turn cold in October. I had him tie a pulley and rope as high as possible on two trees which are about 10 m apart. In order that there be no obstruction to the future wire, he had to remove a few limbs but, what the heck, most of them were dead anyway. The ropes and pulleys went up at about the 20 m level on both trees without a problem.

I have always wanted to learn about antenna modeling and saw this as an opportunity to get my feet wet. Several different modeling software packages are available, either free or at low cost, but I elected to use EZNEC demo v 6.0, as it is supposed to do almost everything that the more sophisticated products will do, it has good documentation and is free. After reviewing the instructions provided with the package, I had no trouble working through the examples to get familiar with its features. There are also several good tutorials available on You-Tube. EZNEC does assume that you have a basic understanding of impedance, resistance and reactance which are expressed in the form of complex numbers ($Z = R \pm jX$) as well as familiarity with x-y-z rectangular coordinate systems, but that's about as complicated as it gets. I was pleasantly surprised to find out how intuitive the software is to use.

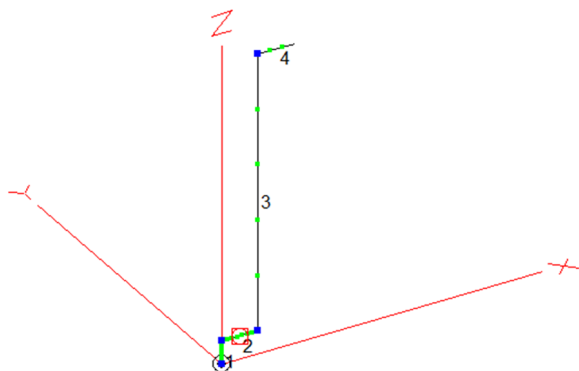


Taking my guidance from the ARRL Antenna Book, here is the basic configuration that I planned to model: the top portion of the antenna above ground is around $\frac{1}{4} \lambda$ long and the other $\frac{1}{4} \lambda$ is in the ground in the form of radials or counterpoise. The bend to make the above-ground wire into an L can be done at any convenient place, but I intended to make most of the antenna vertical. This configuration under normal circumstances will provide a usable swr over most of the 80 m band, with the help of a tuner.

However, due to the proximity of the wire to ground, its radiation resistance (R) is said to be lower than 50Ω . I wanted to aim for 50Ω at resonance to match the feedline impedance. If the antenna were to be made somewhat longer than $\frac{1}{4} \lambda$, the R value can be increased to 50Ω . However, with the antenna now longer than $\frac{1}{4} \lambda$ it becomes inductively reactive. So I would cancel out the inductive reactance by introducing an equivalent (of opposite sign) series capacitive reactance at the feedpoint - or, as expressed in mathematical form, the impedance would be $Z = 50 \pm j0$ at resonance.

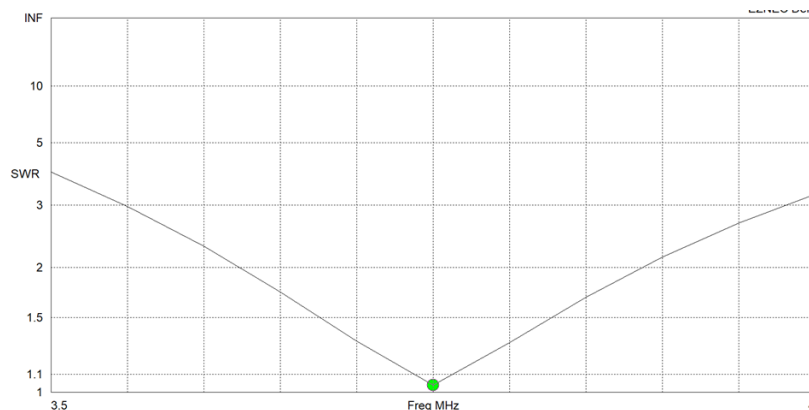
My objective was to locate the minimum swr at 3.75 MHz, the centre of the 80 m band. A critical parameter is ground loss but the demo version of EZNEC does not allow modeling of the counterpoise system. Instead, the ground loss was estimated based on advice in one of the tutorials. I chose a series load loss of 10Ω to represent an acceptable but less-than-perfect ground radial system, since I hoped to get by with only 5 radials. I was soon to find out that 5 isn't a sufficient number.

After much EZNEC trial-and-error, here is the final antenna configuration:

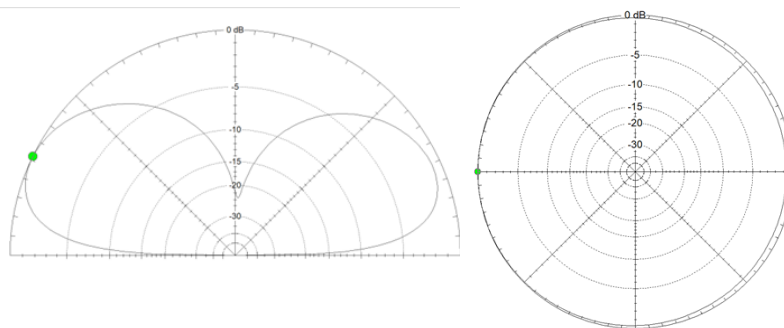


Wire #1 represents a 6' length of copper pipe to which the counterpoise wires are attached at the bottom; wire #2 is a short horizontal connection from the top of the pipe to the bottom of the vertical wire with the "feedline box" located approximately midway between the two; wire #3 is the main vertical radiator, and Wire #4 is the short horizontal leg. The small rectangle shows the location of the coax feed point, and the small circle is ground.

The total length of the above-ground portion (wires 1-4) is 22.3 m, which is longer than $\frac{1}{4} \lambda$, as intended. After compensating for the inductive reactance by insertion of a series X_C of -89Ω in the model, the predicted SWR graph came out as shown below. At the target frequency of 3750, R was 48Ω and the reactance virtually zero.



The Far Field elevation and azimuth plots are as shown below with the maximum gain 25 deg above the horizon, and the antenna is nearly omni-directional, not unexpected for an antenna which is basically a dipole turned on its side. This antenna will not likely be effective at short range as there is little vertical component to the elevation pattern.



January 2018

I was also interested in the conditions at the feed point and capacitor. Since I may want to run at full power, I specified the power as 1500 watts in the EZNEC Options menu. The result shows that the series reactance-compensating capacitor should have a spacing on the plates that will withstand at least 540 v without arcing when operating within the band. To provide -89Ω of X_C , the capacitance would be about 480 pF based on the formula $X_C = 1/2\pi fC$.

And now for the construction

Three items were included in the feedline junction box:

1. a common mode choke,
2. a 30-1000 pF variable capacitor to introduce series capacitive reactance as described above, and
3. a surge arrestor, all as shown in the photo.

Five counterpoise wires, each 22.3 m long and buried 10 cm below the surface of the ground, were soldered to a 6 ft. $\frac{1}{2}$ inch copper pipe driven into the ground and connected at the top to one side of the choke. The ground wires ran from the base of the copper pipe all around the yard wherever I could fit them in, in all cases with bends to accommodate obstructions and the constraints of the property boundary. Instead of the store-

bought choke I could have used a coax coil looped through ferrite toroids, which would have done the same thing. I put insulation around the ground rod to protect children and animals from RF.



Since the feed point for this antenna is at ground level, it made it possible to conduct measurements right at the antenna without the presence of a feedline.

On the next page, the scans of SWR, R and X were made with the club's RigExpert AA-600 analyzer.

You will note that the minimum SWR is about 1.5 and it is also shifted slightly from 3750 kHz. The higher SWR than predicted is because the impedance is not 50Ω but 79Ω - comprised almost entirely of R since the reactance was tuned out (observe the green reactance line crosses the 0Ω axis at 3750 kHz).

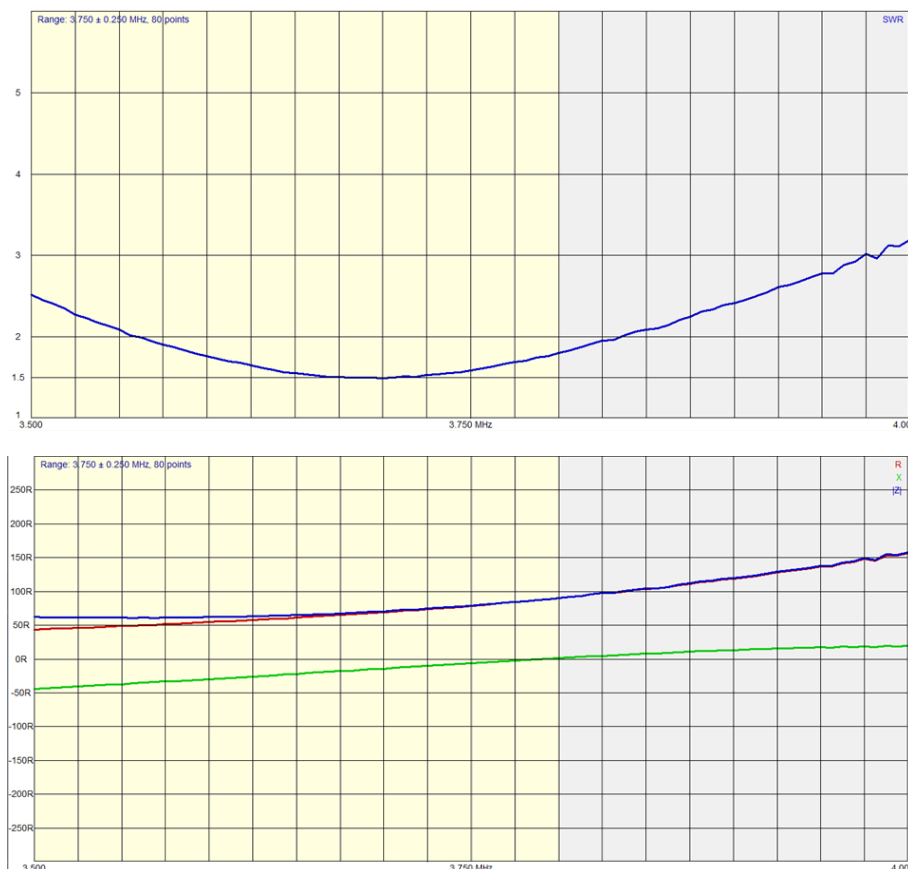
Now this would actually be a very acceptable match across the entire band, but it does indicate that more counterpoise wires would be beneficial in order to match the model. If we return to the model and simulate a poor ground by increasing the load R from 10Ω to 30Ω , the model confirms that the minimum SWR does in fact rise to 1.5. So I plan to add more ground wires while I monitor the SWR and impedance (both of which should come down) as the work progresses.



I was gratified to find that changes made to the physical configuration were consistent with the model's predictions. This exercise has given me confidence in the modeling software and a better understanding of how the components of impedance inter-relate with the physical characteristics of the antenna.

In the next installment I intend to outline a few things that did not make sense, and ask for advice in their interpretation, e.g. 1) how 3 different analyzers gave me 3 distinctly different results and 2) how introduction of the feedline also affected the results.

~ John VA7XB



More Good advice on RFI, Common Mode, Chokes

Pin 1 Problem etc from rfi@contesting.com

AC line filters are a complete waste of money. They only work on differential mode RFI (even though they say they do common mode) and nearly all RFI induced on wiring is common mode. So... Ferrite common mode chokes are the solution that works.

Poorly balanced antennas are a MAJOR cause of RF in the shack and the house.

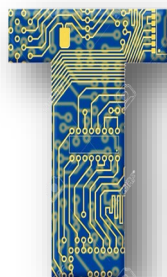
Almost any antenna fed with 2-wire line will put common mode current on it, and off-center fed antennas are the worst. The solution is a serious common mode choke at the feedpoint, BUT off-center fed antennas put HUGE common mode on the line, so any decent choke will FRY.

Any antenna that WORKS will put RF current on any conductors near it. We may call them speaker cables or audio cables, but Mother Nature calls them ANTENNAS. Nearly all equipment is built with a design defect called "The Pin One Problem," which causes any current flowing on cable shields to get into the equipment. If it's AF (power line fundamental and harmonics) we hear it as hum and buzz; if it's RF, it gets detected and amplified. The solution is pretty simple... start with proper bonding of all equipment in the shack and any home entertainment setup. Add to that multi-turn ferrite chokes on all wiring coming into those systems, and if you still have problems, chokes on interconnecting wiring. Study this set of slides for a talk I've done for several ham clubs and at Pacifcon and the Visalia DX convention. It has been a large part of the basis for N0AX's new ARRL book on the topic. <http://k9yc.com/GroundingAndAudio.pdf>

Another mechanism couples RF from speaker cables to power amps. All audio amplifiers have feedback around every gain stage to reduce distortion and noise. The feedback network around the output stage of an audio power amp couples any RF on the speaker cable back to the input, where it is rectified and amplified. Two solutions for this. First, replace all zip cord used as speaker cable, glorified or plain, with twisted pair. Twisted pair has been used for more than a century to resist crosstalk, and is about 30 dB better than zip cord in rejecting differential mode pickup. Second, if you still have a problem, put serious ferrite chokes on the speaker cable.

~ Jim K9YC

January 2018



Tech Topics

Daniel Romila VE7LCC

Programming the UV-8DR

This tutorial is about downloading the programming software for the MML UV-8DR walkie talkie, also sold as the HIGHGRADE UV-8DR and VEASU UV-8DR (*No folks, that's not a typo-Ed*). It is a Chinese portable transceiver, good for 3 bands: 144 MHz, 220 MHz, 433 MHz and also for listening to FM commercial radio and weather stations. The Baofeng programming software does not work with this one. At this time, the free CHIRP program does not work either.

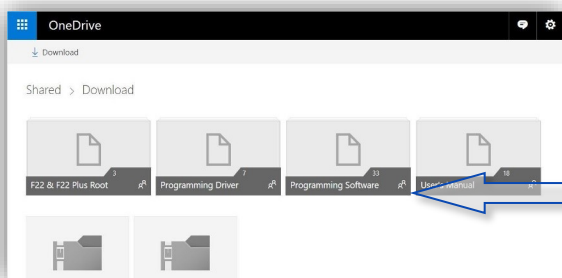
1. Go to:

<http://www.446shop.com/help/help5-18.html>



2. You will see on the screen:

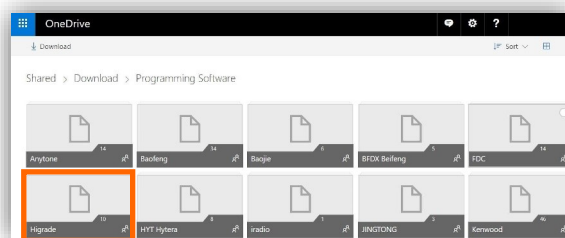
3. Click the blue square DOWNLOAD:



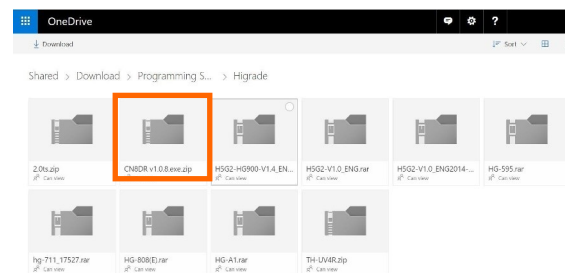
4. You will have on the screen:

5. From this screen, select PROGRAMMING

SOFTWARE:



5. After clicking, you will have on the screen:



7. If your walkie talkie is HIGHGRADE. You are interested only in the software from the **HIGHGRADE** folder. Nothing else works.

8. Click **HIGHGRADE**. You will have on the screen:

9. The file you want is called CN8DR v1.0.8.exe.zip (the second on the left). Click on it.

10. The download will start. It is the right file, the file that I am using myself. Depending on the operating system and your Internet browser, the download will go to a directory

How to program the MML UV-8DR via USB

on your computer.

This tutorial is about how to do the actual USB programming for the MML UV-8DR, also sold as a HIGHGRADE UV-8DR and VAESU UV-8DR. It is a Chinese portable transceiver, good for 3 bands: 144 MHz, 220 MHz, 433 MHz and also for listening to FM commercial radio and weather stations.

There is a previous tutorial that should be completed before this one, called "Tutorial about how to download the programming software for MML UV-8DR". Also, have the USB programming cable handy. And yes, this is the same as the Baofeng cable, but the software is not.

At least in Windows 10, no driver needs to be installed.

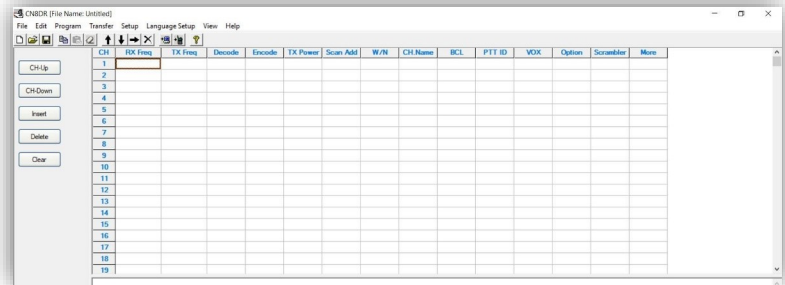
1. Connect the USB programming cable to the handheld and to the computer.



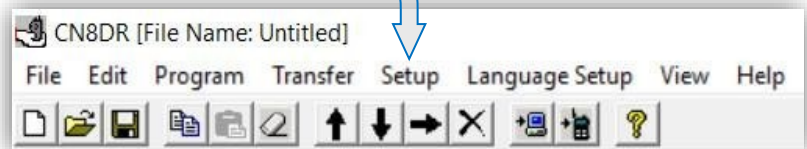
2. Switch ON the handheld.



3. Start the program on the computer. Its icon is shown at right.
4. When started, the program windows look like this:

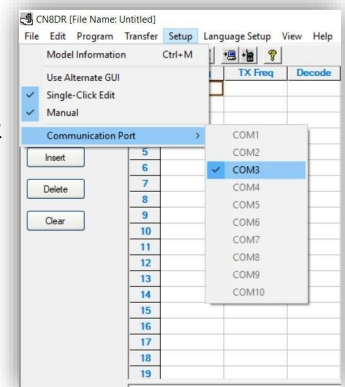


5. Click SETUP, on the bar.



6. In the new SETUP window, click COMMUNICATION PORT, and select your COM number:

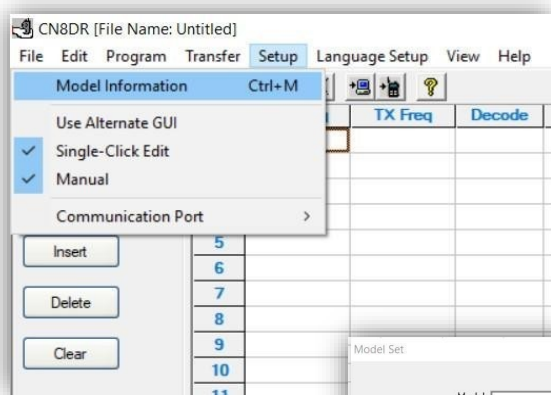
It is COM3 for me and everything else is grayed out. It might be another port number for you.



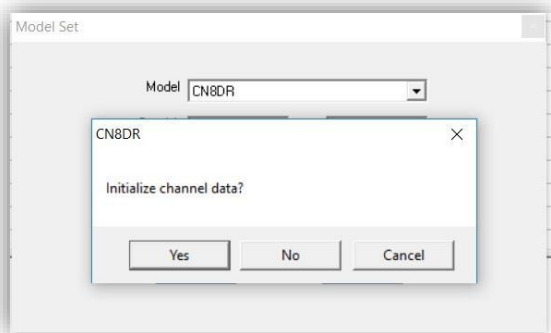
7. Now you can verify your handheld is communicating with the program, by clicking SETUP and from the new window select MODEL INFORMATION.

January 2018

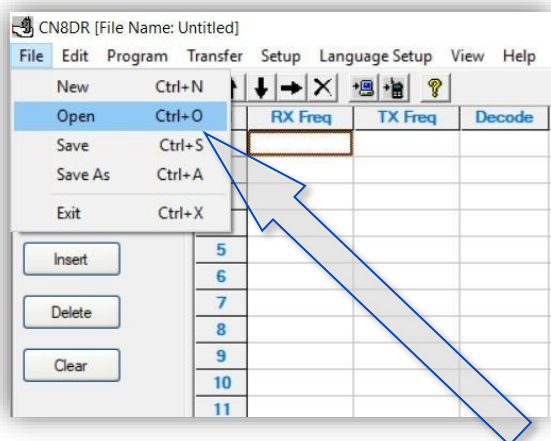
8. For our handheld, it has to be like this:



It is important to have the bands and numbers as I have, as in the picture above. If necessary, please input the correct numbers as above, otherwise it will refuse to program



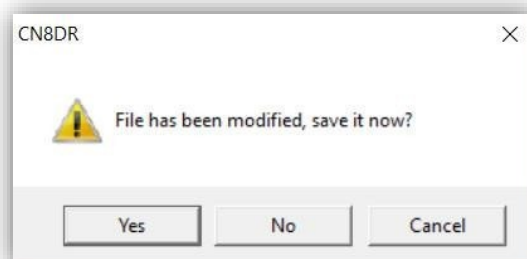
9. Click OK. It will ask you if you want to initialize the channels. Click YES.



10. Now you are ready to start programming the handheld, with the .dat file. [Download it here](#), and that's what I use in Coquitlam. It is also possible to do it manually from zero. Maybe it is a good idea to start with this already made one.

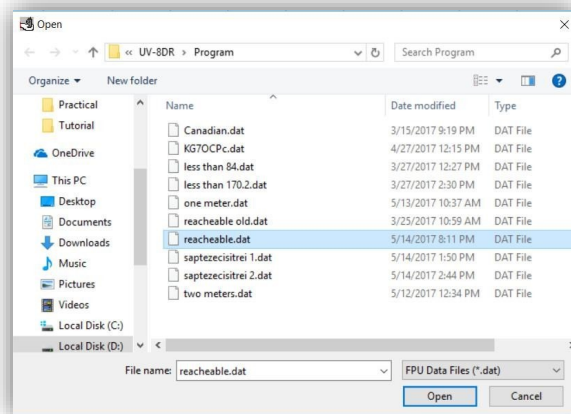
Click FILE and select OPEN.

11. It might ask you:

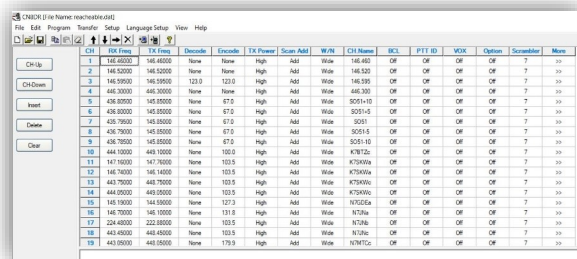


Click NO.

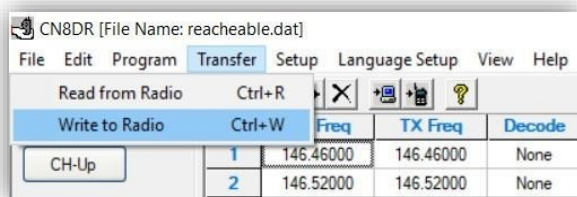
12. Select from the new window the file **reacheable.dat**, the file that I am using. You might need to browse for it.



13. Click OPEN, and you will have on the screen:



14. You can transfer all this info into the handheld, by selecting TRANSFER and WRITE TO THE RADIO:



15. After clicking WRITE TO THE RADIO you will see in the bottom of the programming window the progress of transferring the information into the walkie-talkie. It takes around 6 seconds for me.

16	140.70000	140
17	224.48000	222
18	443.45000	448
19	443.05000	448

Opening Port...
Transferring data blocks...
Completion percentage 10%
Completion percentage 20%
Completion percentage 30%
Completion percentage 40%
Completion percentage 50%
Completion percentage 60%
Completion percentage 70%
Completion percentage 80%
Completion percentage 90%
Writing completed!
Port Closed.

16. It is possible the program executes, and disappears in the air after it completed the operation. No problem! Now you can disconnect the handheld and use it.
17. If you have the settings in the menu, as I showed you in the menu setting .xls file, everything is ready to work.

VERIFICATION to see if the handheld is programmed:

1. Switch ON the handheld, disconnected from the computer.
2. Rotate the dial on top of the handheld, and you will see on the screen the channels rotating with each dial click. If you have the settings as I've told you, you will see the names of the repeaters.
Attention! The first channels have the same name as their frequency numbers, so it can be confusing if you do not look in the .dat table to see what to expect, and in which order. If you see only numbers instead, after continuing rotating the dial, except for the first channels, that means CH-NAME in the menu is not set to display the name of the channels, but the frequency (lines 20 and 21 in the menu from its manual).

~ Daniel VE7LCG

Daniel, the author of the article above, has a for sale item. He writes:

I have awesome experience with the tri-band MML-UV-8DR, which is \$67 CAD, including shipping and taxes:

<https://goo.gl/J8AXMe>

The cheaper most common Baofeng UV-5R are \$30 CAD, including shipping and taxes:

<https://goo.gl/yqPVqn>

I just got the wrong power adapter/battery eliminator, good for Baofengs, not for mine. I am open to trades, ideas and so on. Attached.

~ Daniel VE7LCG

danielromila@gmail.com



January 2018



The Contest Contender

Sheldon Ward VA7XNL

A Field Day 2017 Results

Well the results are in and I think we did quite well for Field Day (FD) 2017. While I have attended and operated at the SARC Field Day in the past this was my first time as the FD Chair. This year we decided to make FD more social than competitive but we still did well versus others stations. This article will primarily focus on the scores.

You can examine and compare scores on the ARRL web site: http://www.arrl.org/results-database?event_id=91339

Here you can search and compare scores by category, power multiplier (VE7SAR was 2), and section.

This makes it easy to compare our station to other similar stations. Hint: to list Canadian stations use "Non-US" in the section/division list.

Quick highlights are:

Total score: 4,058

QSOs (contacts): 1,149

1st in BC overall

1st in 3A in Canada (of 10)

12th in Canada overall

75th in 3A

I counted at least 25 participants for our Field Day effort. This includes 14 operators and a lot of others that only wanted to help. We couldn't have done it without the great effort of everyone. Thanks go to the City of Surrey once again for the use of the old Grandview school site on 176 St., which makes for good propagation. Surrey MLA Marvin Hunt also attended as our VIP guest.

1st in BC overall

There were 31 reporting stations in BC and we were 1st overall! This includes all categories and power levels. After our score of 4,058 was the Delta ARS, VE7SUN with a score of 3,388. Their web page: <http://deltaamateurradio.com/> They have a number of photos posted: http://deltaamateurradio.com/wp/?page_id=6367



Other geographic areas of interest:

Full BC results:

[http://www.arrl.org/results-database?
fd_category=&fd_power=&fd_sect=BC&ss_call=&sort
0=&sort1=&sort2=&event_id=91339](http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=BC&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

Full Alberta results:

[http://www.arrl.org/results-database?
fd_category=&fd_power=&fd_sect=AB&ss_call=&sort0
=&sort1=&sort2=&event_id=91339](http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=AB&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

Full Western Washington (WWA) results:

[http://www.arrl.org/results-database?
fd_category=&fd_power=&fd_sect=WWA&ss_call=&so
rt0=&sort1=&sort2=&event_id=91339](http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=WWA&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

Full Eastern Washington (EWA) results:

[http://www.arrl.org/results-database?
fd_category=&fd_power=&fd_sect=EWA&ss_call=&sor
t0=&sort1=&sort2=&event_id=91339](http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=EWA&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

Full Northwestern Division (US NW) results:

[http://www.arrl.org/results-database?
fd_category=&fd_power=&fd_sect=Div-](http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=Div-NW&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

[NW&ss_call=&sort0=&sort1=&sort2=&event_id=91339](http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=Div-NW&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

2nd in BC, Alberta, US NW division in 3A

I thought it would be interesting to compare our score to others in this part of North America. In the 3A category we placed 2nd of 28 stations (2 BC, 1 Alberta, 25 US NW). The Stanwood Camano ARC had a score of 4,628 with 1,009 QSOs. They were operating the same power multiplier (2) and had 75 participants (wow!). Their web page: <http://www.scarcwa.org/>

US NW 3A:

[http://www.arrl.org/results-database?
fd_category=3A&fd_power=&fd_sect=Div-
NW&ss_call=&sort0=&sort1=&sort2=&event_id=91339](http://www.arrl.org/results-database?fd_category=3A&fd_power=&fd_sect=Div-NW&ss_call=&sort0=&sort1=&sort2=&event_id=91339)

14th in BC, Alberta, US NW division overall

There were a total of 247 stations (31 BC, 16 AB, 200 US NW) in this part of North America for all categories and we came in 14th. This includes stations of all sizes including the Mike and Key ARC, K7LED station from Seattle operating as 8A (8 radios, emergency power). They had a whopping score of 15,298 with 4,382 QSOs. Check out their linked Field Day pages and their QRZ page. They also have a



Photo: Michael Birtles

January 2018

large number of photos posted including one of a Field Day 2017 cake! Maybe we need a FD cake for 2018 too? That might be their secret!

<https://www.qrz.com/db/K7LED>

<http://www.mikeandkey.org/fday0.php>

<http://www.mikeandkey.org/fday.php>

US NW Division:

http://www.arrl.org/results-database?fd_category=&fd_power=&fd_sect=Div-NW&ss_call=&sort0=&sort1=&sort2=&event_id=91339

75th in 3A

While 75th doesn't sound like a super achievement, this was of 322 stations from all over North America. This was lead by the Rochester (NY) DX Association, W2RDX with a very impressive score of 15,092 with 4,100 QSOs. Check out their web site: <http://rdxa.com/> Check their "Latest Newsletter" at the top that includes a Field Day article.

3A Category:

http://www.arrl.org/results-database?fd_category=3A&fd_power=&fd_sect=&ss_call=&sort0=&sort1=&sort2=&event_id=91339

1st in 3A in Canada (of 10)

While there were only 10 Canadian stations in the 3A category (3 radios on emergency generator power) we had a good lead on the Quinte ARC/Prince Edward RC, VE3RL clubs' score of 3,406. Geographically they are close to Kingston, Ontario. The Quinte ARC web page: <http://www.qarc.on.ca/> Prince Edward ARC: <http://www.peradioclub.ca/>

Non US 3A:

http://www.arrl.org/results-database?fd_category=3A&fd_power=&fd_sect=Div-FG&ss_call=&sort0=&sort1=&sort2=&event_id=91339

364th overall of 2965 entries.

All categories and power levels. Top overall was the Potomac Valley RC & Columbia ARA, W3AO station operating 16A (16 radios!) with 39,430 points and 12,434 QSOs! QRZ: <https://www.qrz.com/db/W3AO> One report: <https://annieriedora.com/2017/06/29/w3ao-field-day-the-2017-edition/>

http://www.arrl.org/results-database?event_id=91339&ofst=350

Also be sure to check out the official QST results article in the December issue. VE7SAR is listed on page 79, 3rd column, 1/4 up from bottom. The article is also available online: <http://www.arrl.org/files/file/ContestResults/2017/2017-FIELD-DAY-QST.pdf>

The ARRL also has a "Soapbox" page: <http://www.arrl.org/contests/soapbox> Here there are a number of stations that have posted short reviews about their 2017 FD experiences. Most are clubs and have included pictures. It is interesting to see what other clubs had set up AND gives us a hint of what the competition will be using next year!

Of course there is more to Field Day than just scores and I think operators and non-operators alike had a good time.

And if you haven't read my post Field Day article it is in the [September Communicator](#), page 34-36. Also check out all the FD pictures posted by John TI in that issue.

Special thanks go to those on the 2017 Field Day Committee. They put in lots of time planning and preparing and it paid off.

~ Sheldon VA7XNL
SARC 2017 Field Day Chair



QRT

Sheldon Ward VA7XNL

Final Thoughts on Field Day 2017

Here are some of my thoughts and those of others on Field Day 2017 and how we can improve for next year. In no particular order.

The port-a-potties were placed too far away from the activity. This was my fault. While we don't want the smell, we don't want to have to go for a long walk to get to them either, especially if it were to rain. Next year they will be closer.

This year we used two tents and the SEPAR trailer for our stations. Compared to the large tent we have used in prior years this was quick to setup and tear down with a smaller number of members. This worked well to keep the noise from one station bothering the others. This was a benefit while demonstrating or training. Operators weren't required to wear headphones to keep out the noise. While one tent set up between the trees and the SEPAR trailer kept cool during the sunny afternoon, the other did not. The other tent was only shaded by the trees for part of the day and even with a tarp over top, it got pretty warm inside. More thought is needed to place all the tents in the shade yet close enough to the others, antenna connections and power.

We used 4 computers. One per station plus one for the master logging software. The problem we had was it was assumed we could get the logging software networked quickly just before FD started. While the N1MM logging software recorded all the contacts fine, one station wasn't quite working correctly, and this caused it to not see contacts that had already been made, and thus wasted time with duplicates. Next time all computer networking needs to be tested completely ahead of time.

AC power was also not fully tested. The UPS powering the computers was not charging its batteries or happy with the power from the generators. The generators used were the "inverter" type and that appears to be the

problem. Further investigation and full testing will be required if we continue with this computer setup. Two generators were supplied by members and the club should consider purchasing another so we don't need to rely on members providing them.

While the computer monitors used were bigger than most laptops have, N1MM takes up a lot of screen real estate. Larger 1920x1080 HD monitors would help.

While we did not have internet access for the spotting networks, it would have helped when searching and pouncing for missing call signs. In prior years this has been set up with dish antennas to the fire hall across the street, but with our limited help it wasn't done. It would also be possible with a cell phone connection as long as we used a router to filter out all but the telnet connections required, otherwise Windows and other programs may use too much of the cell phone owner's data plan. I like operating in a true "field" emergency mode without the spotting networks, but it does cost us some time and points.

We really need more of a team effort. While some members do come out and help (even if they are not operating) it is usually the same members that help all the time. This is the biggest club event of the year and it would be greatly appreciated if more members were to help in any way they can. Many hands make light work. If you want to operate you need to help with set up, etc. You shouldn't expect air time if you are not prepared to help with what needs to be done to get on the air.

Field Day is not a time to train operators on how to use an HF radio or use the logging software. Show up for other contests or training, or lose your chance to operate at FD. We need motivated operators, not just those that want to "try out" an HF radio, Field Day or contesting. If you aren't motivated enough to use an HF radio outside Field Day or know how to use the N1MM

January 2018

SARC CLUB EXECUTIVE 2017-2018

PRESIDENT

Stan Williams VA7NF
[president @ ve7sar.net](mailto:president@ve7sar.net)

VICE PRESIDENT

John Brodie VA7XB
[vicepresident @ ve7sar.net](mailto:vicepresident@ve7sar.net)

SECRETARY

Jeremy Morse VE7TMY
[secretary @ ve7sar.net](mailto:secretary@ve7sar.net)

TREASURER

Scott Hawrelak VE7HA
[treasurer @ ve7sar.net](mailto:treasurer@ve7sar.net)

DIRECTORS

John Schouten VE7TI
(Communicator Editor
& SEPAR Liaison)
[communicator @ ve7sar.net](mailto:communicator@ve7sar.net)

Sheldon Ward VA7XNL
(Repeater Manager)
[repeater @ ve7sar.net](mailto:repeater@ve7sar.net)

Robert Fishwick VA7FMR
(Net Manager)

Bill Gipps VE7XS

MEMBERSHIP

John Brodie VA7XB
[membership @ ve7sar.net](mailto:membership@ve7sar.net)

QSL MANAGER

Heinz Buhrig VA7AQ
15684 102 Avenue
Surrey, BC V4N 2G4

EMAIL ALL DIRECTORS

[directors @ ve7sar.net](mailto:directors@ve7sar.net)

contesting software, please don't expect any air time for this event. It is only a 24 hour contest and there are lots of skilled members that are willing to operate longer hours. Of course if you are interested in learning, most operators don't mind you watching. There are many other contests during the year to learn contesting and many members willing to teach you the ropes.

If you are going to be hungry during your stay at the site don't forget to bring your own food. While the club may provide some food and refreshments for those helping or operating before, during, and after, we are not feeding everyone for the entire event. Operators need to be mindful to not get food or drink on members' radios or computers.

Unfortunately due to our limited antennas and propagation we were limited to 15, 20, 40, and 80 metre bands. This year, 10m wasn't worth trying over 40m during the day, and 160m requires another antenna, and is likely more work than it is worth.

We can have a "social" event and be competitive at the same time. Competitive doesn't mean we have to use the absolute best testers or equipment. We want to put in a reasonably good effort over the short 24 hours period.

We can't have dogs barking and disturbing the operators and others from having a good time. Please leave your pets at home.

For antennas, we used the TH-7 yagi on Big Foot for 10, 15, 20 metres and a dipole for 40 and 80 metres. The TH-7 worked great, because with the triplexers we are able to use all the bands of the TH-7 at the same time. The dipole was between trees, the tower and a pole to the south east. Pulling up the south east end was very difficult on the hands as it needed to be pulled pretty tight to raise that length of wire. This is where a pulley would have greatly helped. Also, one of the support ropes for the wire's balun was pulling perpendicular on the tower, which appeared to be too much of a load and should be avoided. The tower can support it from above, but not with the pulling from the side.

The club could also consider purchasing a 40m 2-element "beam" for Big Foot. While there has been some discussions about its effectiveness over the dipole that "points" to the middle of the USA for Field Day, being able to rotate it on the tower while band conditions change may be more beneficial. Approximately 21% of our QSOs were on the 40m band. It would also be useful for other contests where we want to make contacts other than just in one direction on 40m.

While several Bonus Point categories are "completed" before we even start, such as emergency power, public location, etc., there are several that were missed but relatively easy to complete. We need members to take on these responsibilities to



ensure they get done. It is too much for one or two people to try to get these bonus points while also having other responsibilities. We don't need to get all the bonus points but some, such as the W1AW FD message are almost a gimme requiring we only remember to do it!

We had 505 CW and 644 phone QSOs, 44% and 56% respectively. The ARRL doesn't list the breakdown for the other stations, but it would be interesting to see. Perhaps over night, when activity is low, would be the time to give one of the digital modes a try?

On a positive note, I am glad we operated a full 100 watts instead of trying to work QRP with only 5 watts such as we did in 2015 in the field. While QRP gets us 2.5x as many points per QSO, I think it can be very frustrating trying to be heard, especially when operating SSB phone. Even if you are "running" and calling CQ it is easy for you to get bumped from your operating frequency by another station that simply could not hear

you and thought the frequency was open. That doesn't mean QRP doesn't work, as looking at the posted scores it obviously does, but like they say... "location, location, location". Some locations in North America are better for QRP than others.

Planning for Field Day 2018 needs to start soon in the new year and I hope you will think about helping, or even joining the FD committee.

I encourage you to also read John VA7XB's QRT in the [October Communicator](#) (page 36-37).

I'm looking forward to what we can do in 2018. Less than 6 months away!

~ Sheldon VA7XNL
SARC 2017 Field Day Chair

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1736 and Echolink node 496228.

On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 or IRLP Node 1737.

	SARC Net 20:00 Hrs
1st Tuesday Standby	Drew VA7DRW Dixie VA7DIX
2nd Tuesday Standby	Jinty VA7JMR Sheldon VA7XNL
3rd Tuesday Standby	Rob VE7CZV Vacant
4th Tuesday Standby	Kapila VE7KGK John VA7XB
5th Tuesday Standby	Robert VA7FMR Vacant
Want a turn at Net Control? Contact the SARC Net Manager	

Down The Log...

SARC Monthly Meetings

2nd Wed. (Sept-Jun)
1900 hr at the PREOC
Emergency Mgmt BC
14292 Green Timbers
Way, Surrey, BC

Weekly Club Breakfast

Saturday between 0800
and 1000 hrs at the
Kalmar Family Restaurant
8076 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hr local
on 147.360 MHz (+)
Tone=110.9

SEPARS Net

Tuesday at 1930 hr local
on 147.360 MHz (+)
Tone=110.9

VE7RSC Repeaters

2m: 147.360MHz+
Tone= 110.9Hz
IRLP node 1736
Echolink node 496228

1.2m: 223.960 Mhz -1.6
Tone=110.9

70cm: 443.775MHz+
Tone= 110.9Hz
IRLP node 1737



We Have A SARC Patch!

These are suitable for sewing on a jacket, cap or your jammies, so you can proudly display your support for the club.

The price is \$4 each or three for \$10 and they can be picked up at a meeting or the weekly Koffee Klatch.



*We thank our sponsors
for their SARC support.
Please support them.*

COAX PUBLICATIONS INC STUDY GUIDES

BASIC QUALIFICATION:
The Canadian Amateur Radio Basic Qualification Study Guide

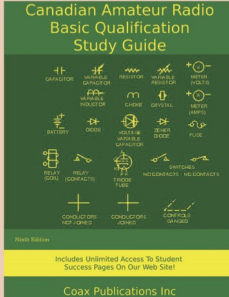
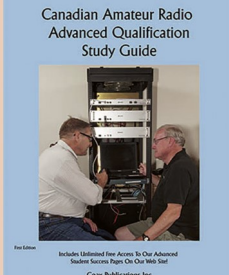
- New 9th edition.
- Updated to the current (2014) Industry Canada exam bank.
- This book is the most widely used study guide in Canadian Amateur Radio classes.

\$44.95 + shipping and taxes

ADVANCED QUALIFICATION:
The Canadian Amateur Radio Advanced Qualification Study Guide

- Updated to the current (2014) IC exam bank.
- Covers many topics in modern communications that are not in the IC Question Bank.
- We have included the small amount of additional material required to match the IC 2014 update in the online Student Success Pages.

\$44.95 + shipping and taxes

**Basic, Advanced or Instructor:
we have them all!**

All of our Study Guides feature:

- Unlimited Access to our acclaimed Student Success Pages on our web site.
- Strong Lie Flat Binding – the book will stay where you opened it when on a flat surface.
- Contextual material that goes far beyond the bare requirements of the IC examination.

Clubs: Note special low club prices for orders of 7 or more books!

Order From Our Web Site
<http://www.coaxpublications.ca>

FLEETWOOD

DIGITAL PRODUCTS

Two Way Radios... For Less

<http://www.fleetwooddp.com/digital>

radio@fleetwooddp.com





These folks did a great job on the hydraulics for our antenna trailer.

18549-97 Ave., Surrey, BC, V4N 3N9 604-882-9787

<http://www.htihydraulics.com/about-us.html>

